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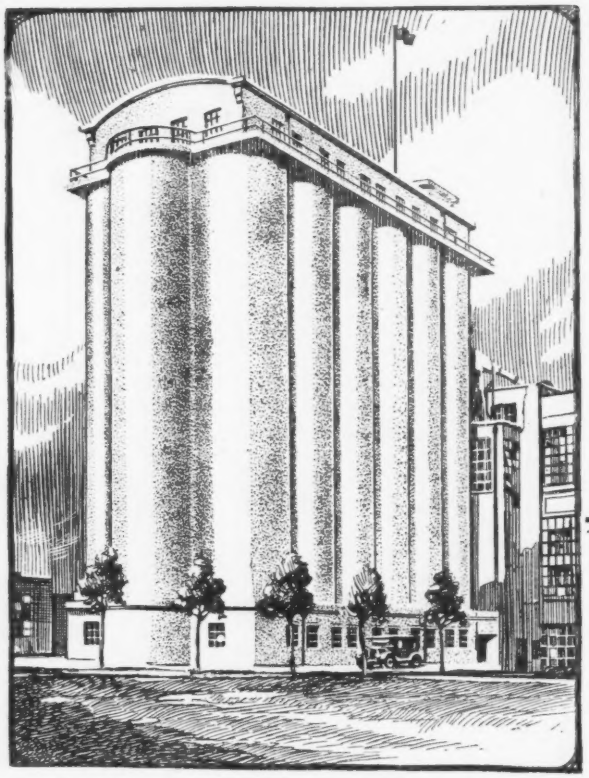

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The editor will be glad to consider contributions from those engaged in the Food Industry. Articles intended for publication should be of a practical nature and accompanied by photographs or drawings whenever possible.

May, 1928

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Canada as a Market.

WE HAVE little space, unfortunately, for so large a subject, but such is its importance that even a crude sketch to bring out salient points will serve our purpose, which is to urge the British manufacturer to give more serious and detailed attention to Canada as a market for his goods.

It is not generally realised that Canada covers an area greater than that of the United States, that it has a population of about 9½ millions, and that it is *not* purely and simply an agricultural country. While agriculture is developing rapidly, industrial production is gathering speed at such a rate as to excite the admiration of the world at large. Take figures; within the last twenty-five years the population has increased 77 per cent.; the bank deposits have increased 624 per cent.; imports, 369 per cent.; exports, 593 per cent.; wheat production, 650 per cent; newspaper production, 915 per cent.; pig iron production, 562 per cent.; coal consumption, 371 per cent.; and freight carried, 218 per cent. And it is certain that this is a mere preliminary to prosperity on an almost unparalleled scale. A vast territory, abundance of water power, forests, coal, valuable minerals, a fertile soil, an invigorating climate, and a sturdy people trained, so to speak, in the American school—what more is required to insure material prosperity? More than once recently we have had the "tip"—"the next batter in is Canada!"

Now is the time, then, for British manufacturers to get themselves well established in this promising market; or, if they are already represented there, to re-examine their organisation and policy. We have certain advantages, but it is not by any means all "plain sailing." In fact, Canada may be said to be a difficult market for us; but it is well worth while to find out exactly why it is difficult. Last month we wrote about the scientific analysis of markets; in Canada we have a case in point. At the outset, one cannot do better than spend a couple of hours in reading the report by F. W. Field, H.H. Senior Trade Commissioner in Canada and Newfoundland, on "Canada as a Market for British Goods," to be obtained for the sum of 2s. 6d., at H.M. Stationery Office, Adastral House, Kingsway, London, W.C.2. This report is a really practical and straightforward statement of the considerations affecting Canada as a market for British goods. It would appear that many firms have only vague ideas as to the peculiarities and the problems of the Canadian market.

Buying Habits.

Here we do not pretend to make more than a very sketchy analysis of the subject. In Canada there are five main territorial divisions—Ontario, Quebec, the Maritime Provinces (Nova Scotia, New Brunswick, and Prince Edward Island), the Prairie Provinces (Manitoba, Saskatchewan, Alberta), and British Columbia.

Ontario and Quebec, with populations of roughly 3 and 2½ millions respectively, are the industrial provinces; the former is almost entirely English-speaking, whilst the latter is French-speaking to the extent of about 80 per cent. of its population.

The buying habits of the people vary in the different sections, and a thorough test of the market is necessary for any particular sort of British goods. The danger to be avoided is the one of a Canadian sales policy at home without a first-hand knowledge of the problems of marketing in the Dominion. In certain areas the buying habits and the life of the people are similar to those at home. In other sections they approach closely to those of the United States, and in other divisions they may be described as purely Canadian.

Thus, Ontario consumes large quantities of canned goods; Quebec does not do so. A British firm selling food products, which is a household word at home, has found that 75 per cent. of its sales in Canada are in the large centres of population; that 10 per cent. of its sales are with chain stores; that its best trade is in Vancouver and district, and that its poorest business is in Western Canada. While this is the experience of one firm, that of another British manufacturer may differ materially, even in a somewhat similar trade.

It boils down to this: that each firm must undertake its own market analysis according to the principles we discussed in last month's issue.

Other Market Factors.

Canada differs from other markets in two vital respects—namely, the extent of Canadian industrial production and the competition of the United States at the closest possible range. In the latter respect it is obvious that the United States has a number of marked advantages; and, apart from these, considerable United States capital has been invested in the Dominion during the past few years. These funds have been directed principally to the establishment of branch works, thus enabling them to give the Canadian market intimate treatment, to avoid payment of Canadian Customs duties on finished articles sold in Canada, and to secure the benefits of British preferential tariffs in their export trade from Canada. The majority are assembling works; the parent company, in U.S.A., often makes buying arrangements for both works, and this, in conjunction with other influences, often inclines towards the purchase of United States machinery and equipment. British manufacturers have to reckon with this keen competition, but a recognition of the fact is useful, as past history has proved in not a few instances.

Then, again, the climatic peculiarities must be taken into consideration. Thus, the exporter must determine the suitable shipping route, owing to certain ports becoming ice-bound in winter; he must pack goods to withstand extreme temperatures, and he should be ready to accept the advice of trusted local representatives in such matters.

Methods of Representation.

The necessity for adequate representation in Canada is of vital importance. British firms have adopted, with varying success, several methods of representation. The principal are:

(*a*) Branch works.

(*b*) Branch office and sales organisation.

(*c*) Agents working on a commission basis.

(*d*) Joint representation with other firms on an agency or branch basis.

(*e*) Periodical visits of representatives from United Kingdom.

In his report Mr. Field discusses each of these at some length. With the limited space at our disposal we can merely pick out a few of the points to which he draws special attention.

With regard to the first, many British firms might give careful consideration to the question of establishing a branch works in conjunction with an adequate selling organisation, either in the form of an entirely new concern or by associating British capital and experience with those of an existing Canadian concern; the latter course offers certain advantages, although a definite recommendation cannot be made. However, it is quite certain that unless after full investigation the home administration have a thorough grasp of the problems demanding solution, based on a knowledge of local conditions, and are prepared to give to the overseas administration a voice in matters of policy, and a wide measure of authority, it will be surprising if any marked success is achieved.

Many firms have established their own branches (other than works) in the Dominion. The branch may be in charge of a manager, with control of salesmen, and stocks at one or more points, or a manager may be placed in charge of stocks, and the distribution is done by wholesale houses. Here, again, costly mistakes have been made, which might have been avoided by a proper survey of the market and the application of a suitable policy.

Agents on Commission.

The largest number of British firms are represented by agents working on a commission basis. Undoubtedly, British trade in the Dominion has suffered by the appointment, in many instances, of unsuitable local representatives. More judgment should be used; the right man as agent, with the fullest possible support from the head office, is the keynote of the situation. It is desirable for home firms to consult the Trade Commissioners before making appointments. There is also another matter which should be kept in mind, and that is, to avoid hampering an agent by inadequate allowances and other restrictions.

A satisfactory local agent is a valuable asset, and it is good policy to retain his services even when a dull business period arrives. A Toronto agency, for instance, was paid a substantial monthly retainer by a German house in New York; the latter wrote the Toronto firm, saying: "Even if you cannot sell goods at present, your experience and knowledge of

the market are of value to us. Send us a detailed monthly report of conditions and the outlook in our line."

Joint Representation.

Mr. Field considers that in a joint arrangement among non-competitive firms lies much hope for the expansion of British trade. The machinery and engineering trades appear to offer a good field. Three of the factors which have impeded greater business are the lack of sufficient local representation and active salesmanship, the failure of home manufacturers to keep in constant touch with those who have purchased their machines, and the inability to effect repairs and supply spare parts at short notice. While the business in any one line may not be large enough to justify the establishment of a proper local organisation, which should remove the difficulties noted, it might prove feasible for several manufacturers of non-competitive machinery to have joint representation in Canada, with a technical man to look after repairs, a good sales organisation which would adopt the American "follow-up" system, and a stock of commonly required spare parts.

Mr. Field fears that unless some such system is adopted, the imports of British machinery will go into a decline.

The main disadvantage of depending on periodical visits for business is the lack of contact, but when the total volume of business is not large or the total number of customers is comparatively small, this method may suffice. In a few trades it proves successful.

Personal Investigation.

Experience has proved that a personal investigation of the market is the best possible method to decide its possibilities; the first-hand knowledge is of the utmost value. A period of not less than three weeks should be allowed; preferably it should be four to eight weeks. Some manufacturers who have made a thorough survey of the market have taken as long as from four to six months.

We may note here two other matters of importance. Some home firms handle Canadian business through agents or branches in New York; in recent years a number of these firms have established, with good results, separate agencies in Canada. The second point refers to the division of the territory for representation. In most cases, at least, two agents should be appointed, one in Eastern and one in Western Canada. In some instances agents will be required at Toronto, Montreal, Winnipeg, and Vancouver, and, possibly, sub-agents in districts such as Northern Ontario, Northern Quebec, and the Maritime Provinces.

Mr. Amery and Canada.

Addressing the Canada Club at a dinner recently, given at the Savoy Hotel, the Right Hon. L. S. Amery, M.P., Secretary of State for Dominion Affairs, predicted a brilliant future for the Dominion. Speaking of his visit to that country, he said: "I came to Canada at a moment when Canada has realised that the difficult years are over—that she has definitely turned the corner, and that the straight road of prosperity lies ahead of her. There is a deep feeling of confidence not only in the immediate but in the ultimate future of Canada. And coming as I did from west to east, the first thing, perhaps, that struck me was the fact that Canada to-day is a great Pacific power, not merely on the map, but in economic fact. Vancouver is becoming rapidly one of the great ports of the Pacific. She is building up a mighty trade with Europe through the Panama Canal, but also building up steadily a great trade with the Far East and with the British Dominions in the south. Year by year Canada will realise more and more the fact that she stands between two oceans and in the very middle of the modern world."

The National Food Canning Council.

The second Annual Convention of the Council has been arranged for May 23 and 24, and will be held this year at Worcester. It will be remembered that the Cardiff Convention, of 1927, proved an outstanding success, and served to attract widespread publicity and interest in the activities of the Council. The industry of food canning in this country badly needed organisation and encouragement, and the results of the deliberations of the National Food Canning Council, under the able leadership of Sir Edgar R. Jones, K.B.E., assisted by the energetic Hon. General Secretary, Mr. H. W. Packer, have been extremely gratifying. Without in any way anticipating the report of Sir Edgar Jones, we may say that the canning of fruits and vegetables in Great Britain has increased by leaps and bounds, owing to the better organisation of the industry as a whole and the excellence of the commodities with which it deals.

In connection with the Convention, it is of interest to note that the Public Hall at Worcester has been secured for the purpose of holding a modestly planned Canning Exhibition, the first of its kind in this country. We do not doubt that future years will witness the Canners' Exhibition developed into a comprehensive and popular exposition of canned foods of many varieties. Fruits and vegetables form the basis of this year's show, but future exhibitions will assuredly comprise many varieties of fish and flesh, conserved in cans, and available for the housewife in tempting and tasteful array.

Meanwhile, we shall observe with pleasure the produce shown by British canners, and we understand the following firms, whose names are household words, will be represented at the First Annual Food Canners' Exhibition, to be held at the Public Hall, Worcester, on May 23 and 24 next:

J. E. AUSTIN AND CO., St. James' Works, Cromwell Road, Kingston-on-Thames.

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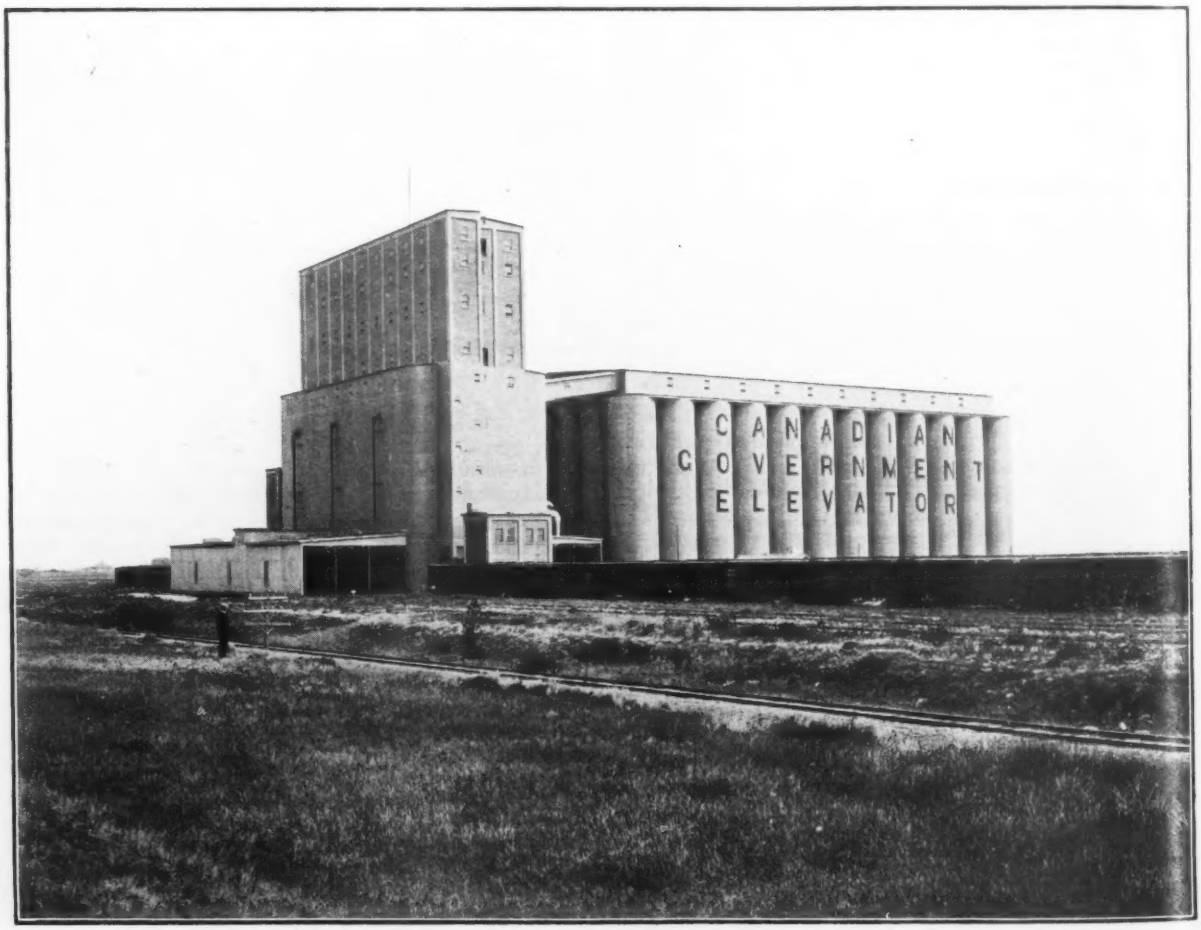
W. P. HARTLEY, LTD., Green Walk, Tower Bridge Road, London, S.E.1.
HAZELWOOD AND CO., LTD., Empire Works, Great Northern Road, Derby.
THE HEREFORDSHIRE FRUIT CO., LTD., The Mansion House, Hereford.
KEARLEY AND TONGE, LTD., Mitre Square, London, E.C.3.
KENT CANNING CO., LTD., East Farleigh, Kent.
J. LONG, LTD., Whitchurch, Hants.
WM. MASEFIELD, LTD., Kent Street, Liverpool.
NEWBERY BROS., LTD., Battle, Sussex.
JOHN STEPHENS, SON AND CO., Gloucester.
VALE OF EVESHAM FRUIT CANNERS, LTD., Blackminster, Evesham.
ANGUS WATSON, LTD., Newcastle-on-Tyne.
S. WHITTAKER, LTD., Paragon Works, Cornbrook, Manchester.
WISBECH PRODUCE CANNERS, LTD., Lynn Road, Wisbech.

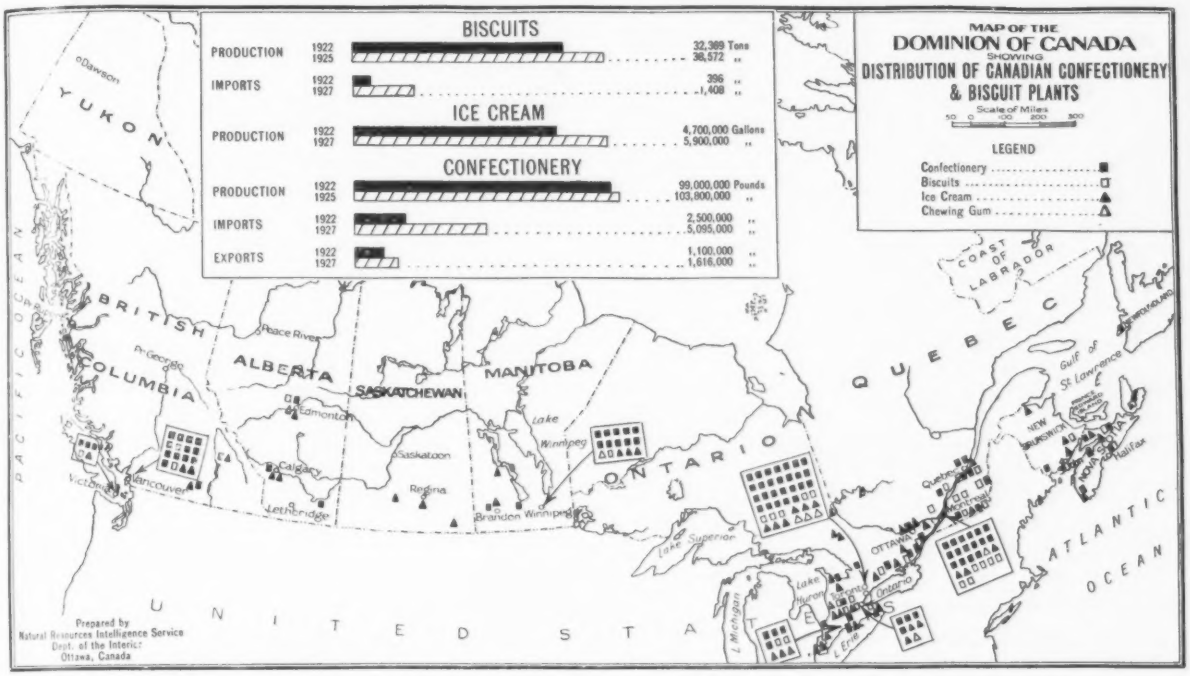
It is anticipated that the exhibition will rapidly become a central feature of the Annual Convention, and that it will be of great practical interest to the many trades which are linked up with a canning industry. Speaking for ourselves, FOOD MANUFACTURE will be there, and we shall welcome the opportunity of meeting many of our readers at our stall.

It is of more than passing interest to note that the National Food Canning Council, under the presidency of Sir Edgar Jones, recently met the representatives of the fishing interests, when steps were considered for increasing the fish canning industry of this country. The various existing canners and associations of deep sea, inshore, herring and mackerel fishing interests attended, with representatives of the Ministry of Agriculture and Fisheries, the Scottish Board of Fisheries, tinplate manufacturers, and other allied trades, with the object of furthering the canning of white and other fish and increasing its consumption. The meeting formed itself into a Fish Canners' Committee of the Council, and appointed sub-committees to organise research and investigate the projects for expansion.



One of the Large Government Grain Elevators situated throughout Western Canada.

The Biscuit and Confectionery Industry in Canada



THE BISCUIT and confectionery trade in Canada has developed from a small beginning over seventy years ago into a large and important industry, which extends from coast to coast, and now occupies eighteenth position in point of value of production among Canada's industries.

There are, according to the latest report published by the Dominion Bureau of Statistics, 320 establishments in Canada manufacturing biscuits and confectionery, of which 19 produced biscuits only, 20 made biscuits and confectionery, 29 ice cream, and the remaining 252 confectionery. In addition many dairies and other concerns made ice cream, and bakeries and others produced a considerable amount of biscuits and confectionery. The industry is mainly centralised in Ontario, although there are long established firms producing well-known brands in all provinces.

The capital investment of the firms engaged in this industry was $40,770,096 in 1925, an increase of $2,213,021 over that of the previous year; 11,958 people employed in the industry received in salaries and wages $10,512,770; and the cost of materials was $23,227,967.

Products

The principal products of the industry are plain and fancy biscuits, candy, chewing gum, and ice cream, but a considerable quantity of bread, pies, puddings, popcorn, and other confections is also made. The total production of the biscuit and confectionery industry in 1925 was valued at $46,745,355, the output of biscuits being worth $13,877,199, of confectionery $25,278,522, ice cream $2,674,726, and miscellaneous products $4,914,908. In addition, biscuits and confectionery valued at $315,469 were made by the bakeries, and dairy and other industries produced ice cream valued at $5,188,426, making the total factory production of ice cream worth $7,974,108. A large, though unknown, amount of ice cream is made in hotels, restaurants, and private homes. Preliminary reports indicate that statistics for 1927 will show considerable increases in all branches of the industry.

Progress and Developments

Progress in the industry over a period of years has been marked by many changes in the nature of the products. At one time sugar candy and conversation lozenges were the vogue; to-day, chocolate bars and boxes of bon-bons have taken their place to a large extent, following the demand noticed in all foodstuff markets for individual packages and sanitary handling.

Another change which may have a marked effect in the near future is the improvement in refrigeration facilities in transportation, which have made long-distance shipping of ice cream possible. Last September (1927) ice cream made in the United States was shipped from San Francisco to Java in the Dutch East Indies and about the same time Canadian ice cream was shipped from Halifax to the British West Indies and British Guiana. The possibilities of this avenue of trade should be worth investigating by those interested.

Following the trend of development in the United States, chain confectionery stores have taken hold in Canada to a considerable extent. Several factories having their own chain of retail stores are doing a flourishing business throughout the Dominion.

External Trade

Exports of biscuits and confectionery for the year ending March 31, 1925, were valued at $937,552; this amount increased to $1,423,631 in 1926, and to $1,588,791 in 1927; of this latter figure imports of chocolate confectionery were $638,188 in 1927, an increase of $383,028 over those of the previous year. Exports for the same years—1925, 1926, 1927—were $463,275, $622,631, and $846,461 respectively, our principal customers being Newfoundland, New Zealand, British South Africa, British West Indies, and the United Kingdom.

An interesting feature of our external trade is the export of chewing gum to the United Kingdom. In the fiscal year ending March 31, 1926, exports of chewing gum to the United Kingdom amounted to $33,964. This amount increased to $250,256 in the following year, and the exports for six months ending September 30 last were $200,882, an increase of $102,842 over the same period of 1926 and $48,666 over the six month period ending March 31, 1927. Chewing gum seems to be in growing demand in the United Kingdom, and though the business is at present largely in the hands of an American manufacturer, whose large scale advertising has been prominent, certain Canadian firms have made marked progress in this trade; and one Canadian firm in which British capital is largely interested has announced its intention of establishing a chewing gum factory in Scotland in the near future.

The confectionery industry is protected by a general tariff of one half cent per pound and thirty-five per cent. *ad valorem*, the British preferential tariff being one half cent per lb. and twenty-two and one half per cent. *ad valorem*. This protection, no doubt, had much to do with the establishment of some important branches of American and British houses in Canada. In this connection it is interesting to note that a large branch of another well-known British firm has recently been established at Toronto, Ontario.

Mergers

As in other Canadian industries, there is a great tendency towards consolidation, and within the last few months two important mergers of bakery and confectionery concerns have been effected.

Home Markets

The products of the biscuit and confectionery industry in Canada are largely for home consumption, which has increased steadily in the past few years. Confectionery may be regarded as a luxury, and, like all luxuries, its consumption depends to a large extent on the general prosperity of the country. Therefore, any change will have a considerable effect on the condition of the market. It must be also borne in mind that many articles which were considered luxuries at one time may now be regarded as necessities, and that, when such an article comes into more general use, the appetite or demand so created is not readily lost.

Canada is to-day enjoying a period of industrial growth and development which is likely to continue for some time, and a continuance of this growth will surely be accompanied by an increased prosperity of the biscuit and confectionery and all similar industries.

Fish Canning and Curing

THE AMOUNT of capital invested in the fish canning and curing industry of Canada, as well as the persons employed, and the quantity and value of the products, are on the increase.

Lobster canneries account for nearly the entire value of the industry's production in Prince Edward Island. In Nova Scotia fish curing establishments lead in importance, followed closely by lobster canneries. Sardine canneries account for almost two-thirds the total value of the province of New Brunswick's canned fish in 1926, with lobster canneries accounting for the balance of the pack. Lobster canneries in Quebec are most important, followed by fish curing establishments. Salmon canneries account for almost all the fish canned in British Columbia, followed by fish curing establishments and reduction plants named in the order of their importance.

Canned salmon is, of course, by far the principal product exported, and in view of this we have included in this issue an extremely interesting article on the salmon industry by a well-known authority.

Developments on the Pacific Coast and in the Maritime Provinces have expanded the fish preserving industry during the second half of 1927. The Maritimes are endeavouring to make the most of an improved market in the British Isles, and they have been carrying out extensive investigations with this object in view. Recently, developments have also been set on foot in anticipation of an expansion of the fish oil and kindred industries.

The greatest development on the Pacific Coast—*i.e.*, in British Columbia—has centred in the pilchard industry. There were about nineteen plants in operation, extracting oil and meal from pilchards, during the summer of 1927. Practically a new industry has thus been brought into existence, which is beginning to cut an important figure in export trade statistics.

The Meat Packing Industry

FROM THE view-point of a domestic supply of raw material, Canada has advantages not generally possessed by European countries. For it has a great packing industry, which in 1926 ranked third among the industries of Canada, with an output valued at $167,127,091. This industry is expanding with the Dominion's development; recently, another abattoir and packing plant with a capacity of 1,000 head of cattle a day began operations for the first time. In the province of Manitoba the industry is second to agriculture in importance, yet there has not been any extensive development of the numerous subsidiary industries usually associated with packing houses, much of the waste material being shipped to the United States, as also is the present practice of some of the packing companies in Eastern Canada.

Important slaughtering and meat-packing establishments are distributed throughout the Dominion. They are to be found at such strategic points as Halifax in Nova Scotia, St. Stephen and St. John in New Brunswick, Montreal in Quebec, Toronto and Kitchener in Ontario, Winnipeg in Manitoba, Regina in Saskatchewan, Calgary and Edmonton in Alberta, and Vancouver and New Westminster in British Columbia. Of the 73 plants all told in 1926, 18 (6 in Ontario, 5 in Quebec, 2 in Manitoba, 3 in Saskatchewan and Alberta, 2 in British Columbia) had an output each of $2,000,000 or more in value, and 13 (8 in Ontario, 2 in Manitoba, 2 in Saskatchewan and Alberta, 1 in British Columbia) of between $1,000,000 and $2,000,000. These 73 plants do not include establishments whose chief or only products are animal oil or fats, and from which, in 1926, were sold 511,256 lbs. of glue, valued at $30,675, and 408 tons of bones, worth $11,299.

The following statistics for the calendar year 1926

Packing Plant at Toronto, Ontario.

are further indicative of the magnitude of the meat and packing industry of Canada:

	No.
Beeves slaughtered	693,290
Sheep and lambs slaughtered	543,891
Hogs slaughtered	2,681,305
Calves slaughtered	334,398
Bones (raw, ground, etc.) sold (tons)	4,901
Gelatine sold (lbs.)	18,758
Glue sold (lbs.)	nil
Glue stock sold (lbs.)	nil

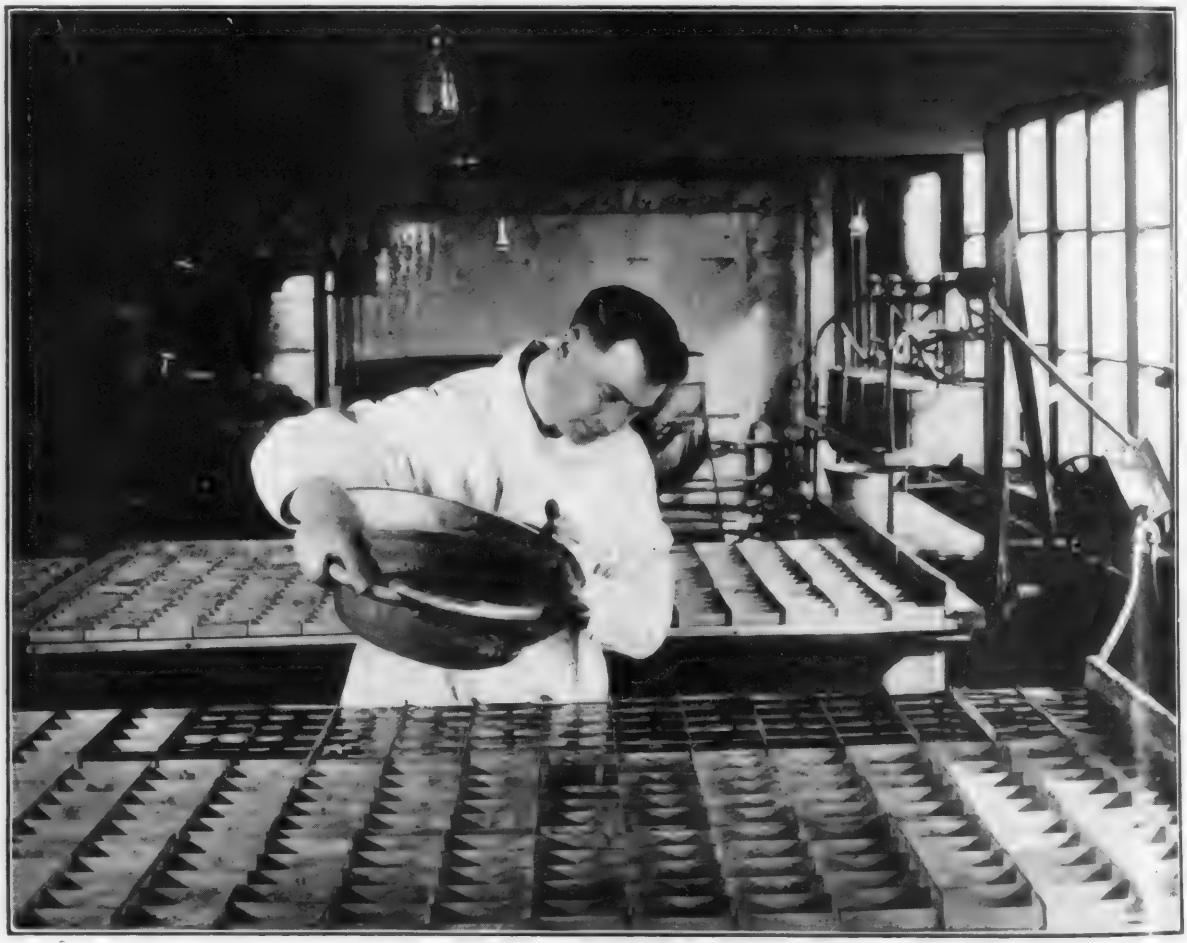
In the same year the exports of bones (crude) from the slaughtering and meat-packing industry and from all other sources in Canada amounted to 1,919 tons, valued at $70,374, and of glue stock to 69,452 cwt., with a value of $90,460. In the twelve months ending March 31, 1927, these figures were 1,992 tons for bones, and 71,281 cwt. for glue stock. Almost all these exports went to the United States.

The amount of bones yearly exported will probably tend to diminish because the domestic demand for fertiliser and poultry feed is increasing. One large packing company, which operates mainly in Western Canada and which occasionally exported a car-load of bones to the United States, expects to distribute its entire annual production of about 500 to 600 tons of bones and sinews in the home market.

The number of animals slaughtered in the meat packing plants and elsewhere in Canada during 1927 was 9,153,915, made up as follows:

	No.
Cattle	1,523,116
Calves	500,014
Swine	5,782,147
Sheep	1,011,479
Lambs	337,159
	9,153,915

Sixty-seven per cent. of the above total consisting of hogs, there may be a tendency to assume that appreciable domestic supplies of pig skins would be accessible to a Canadian producer of edible gelatine. This assumption, however, would not be altogether justified, because the hog generally raised in Canada is not of the American corn fed type, but is a bacon hog, which has a thin hide only occasionally removed, wholly or in part, for the fresh meat trade and certain curing operations.



Pouring Syrup into Moulds to make Maple Sugar Cakes.

The Sugar Industry

Plant of the Canadian Sugar Factories, Ltd.

THE INDIANS taught the earliest settlers the art of preparing that wholesome delicacy, maple sugar, from the sap of the sugar maple-tree. In springtime they brought out their pots and kettles and proceeded to make syrup and sugar. After the year's supply of maple sugar had been made, the various fruits in their season would be preserved in pioneer style. The strawberries, ripening first, would be boiled in sugar and the conserve then poured into a keg and covered with a layer of powdered maple sugar. Following the strawberries came raspberries, blackberries, blueberries, plums, and cranberries, all of which would be treated in like manner; and the hope of the children of the family was that before winter arrived the keg would be quite full of alternate layers of conserve and sugar. "Loaves" of maple sugar were also made by cooling the sugar in milk pails.

As settlement advanced and population increased maple sugar making came to have a social significance. "Sugaring-off" time was made the occasion for an evening party of young people in the woods, when under the thin disguise of assisting the sugar maker, there was much sleigh-riding, racing of horses to the sugar "bush," eating of hot sugar cooled in snow, paying of forfeits and general jollity. It was in fact a sort of spring festival marking the demise of King Winter. After the season's supply of syrup and sugar had been made, buckwheat cakes and maple syrup became during the spring months the national breakfast dish.

With the passing of the pioneer stage and the opening of transportation routes the industry became relatively less important and maple food products—sugar, syrup, butter, and cream—are now generally considered luxuries, but with increasing population and wealth the market is continually broadening. The most popular form of the product of maple sap is syrup, the manufacture of which has now reached a high state of excellence and efficiency. It is sold in sealed containers, glass jars, and bottles, and, like honey, has its light and dark varieties. Most people like the thin, almost colourless liquid, but others, remembering happy days in the woods, prefer a thicker syrup with a rich amber colour and a good "bouquet," and the modern maple sugar maker is able to supply both demands.

Canada as a Market for Edible Gelatine

THERE IS only one manufacturer of edible gelatine in the whole of Canada, according to official information, in spite of the fact that there is plenty of raw material available in the form of hides, bones, fish skins, and so on.

On the other hand the consumption of edible gelatine is very great, and the bulk of the requirements have to be imported.

Ice Cream

The principal outlet for gelatine appears to be in the preparation of ice cream. About six million gallons of this foodstuff are produced annually by the dairy and confectionery industries; this does not, of course, include that made in hotels and private houses, etc. The above output represents about 120,000 lbs. of gelatine.

This use for gelatine is growing, and appears likely to continue doing so. Not only is the home consumption increasing with the steady march of industrialism, but a useful export trade is also being built up. Ice cream has already been shipped as far south as British Guiana, and with improved efficiency in refrigerating methods there should be much scope in this direction.

Jelly Powders, etc.

The home production of these commodities in 1925 was valued at over half a million dollars, and is rapidly growing. In 1927, four jelly powder firms alone consumed between them over 500,000 lbs. of edible gelatine.

The chocolate and sugar confectioners also use large and ever growing quantities of gelatine. The output of such firms in Canada is very great, and as imports are also large, the consumption of confectionery must be somewhat phenomenal. The home producer is, however, making a successful fight to supply the greater proportion of the country's requirements, and with this expansion in view there are clearly openings for all types of edible gelatine of the various grades indicated.

Other Food Products

There are a number of other purposes for which gelatine is employed. It is occasionally used to impart a better appearance to fruit preserves, jams, and gravies, to give body to meat extracts, and as a thickener for cream, chocolate, and cocoa. It is also used in various industries as a cheap yet efficient alternative for isinglass. Certain small but increasing quantities are used in chewing gum.

Pharmaceutical Preparations

Here one may mention the coatings of pills and capsules, toothpastes, court plaster, and ointments; various combinations with glycerine, and so on. The 120 plants in Canada which are engaged in making medicinal and pharmaceutical supplies use between them perhaps 50,000 lbs. of gelatine annually, the bulk of which is imported.

Food Value

Though, biologically, gelatine is an incomplete protein and cannot alone be relied upon to supply bodily needs, nevertheless it supplements other proteins well, and in any case is a useful source of energy. It enters into efficient combination with milk, for instance, for infants and under-nourished children. It is easily digested and absorbed, and is not a stimulant, so that it is indicated in fevers and in digestive disturbances.

Raw Materials

A few years ago some of the leading Canadian packers intimated a willingness to save all the suitable raw material they had for any manufacture of gelatine if they had reasonable guarantees that such raw material would be regularly taken at a satisfactory price by the manufacturer. The recent merger of some of the important packing companies in Eastern Canada should simplify the arrangement of any necessary working agreements between the packers and the producer of gelatine.

Conclusions

In view of the very rapid expansion which is taking place in all branches of Canadian trade where edible gelatine is or may be employed, prospects for manufacturers appear to be good, and this market is well worthy of attention by both producers and by the makers of manufacturing plant. For further particulars reference should be made to a report enitled "Edible Gelatine," prepared by the Natural Resources Intelligence Service, Department of the Interior, Ottawa, Canada.

(*Continued from next page.*)

offered in a frozen state, a method which proved satisfactory for the transport of pulp from the Pacific coast to Ontario jam factories. United Kingdom importers are, however, accustomed to receiving fruit pulp in air-tight packages, and have not taken kindly to the frozen product. A start has, therefore, been made in the use of the air-tight package for British Columbian exports, several thousand cases having recently been shipped to the London market. This business promises to develop. It has been suggested that it would be more economical if larger drums were used containing 72 lbs., or even 144 lbs. We would commend this suggestion to the producers of pulp in all parts of the empire.

Jams and Pickles

THE CONSUMPTION of jams, jellies, and fruit syrups in Canada amounts to about five million dollars, of which jams and jellies form 70 per cent., and marmalade and syrups 20 per cent. A three-year average of imports of jams, jellies, and preserves (including mincemeat) is 325,600 dollars, of which, in 1926, Great Britain supplied 63 per cent., France 21 per cent., and U.S.A. 4·7 per cent. For the three years 1923-24-25, there were no exports of jams, but fruit juices and syrups to the value of 383,260 dollars were exported, mainly to Great Britain.

The commercial output value of pickles, sauces, etc., exclusive of vinegar and certain minor products, is about six million dollars. The imports for 1926 were 530,000 dollars (of which Great Britain sent 54 per cent., U.S.A. 30 per cent, and Japan, with China, 12 per cent., mostly "soy.").

There are, in all, some 51 factories listed as jam, marmalade and fruit pulp; 39 as fruit syrup, and 60 as pickle and sauce. Of these 150 factories, Ontario has 73, Quebec 27, British Columbia 19, the Prairies 18, and Nova Scotia and New Brunswick 13.

Ontario and British Columbia produce 60 per cent. of the raspberry crop and about 80 per cent. of the strawberries. Nova Scotia, Ontario and British Columbia are the chief apple-growing provinces. Ontario has nearly all the grapes and peaches. Ontario and British Columbia grow most of the cherries, whilst British Columbia provides half the plums. Though the apple crop of New Brunswick and Prince Edward Island is small, as is also the cherry crop of all the Maritime provinces, the climate and soil are admirably suited to produce these fruits. The cherries of Nova Scotia were at one time famous.

The only fruit pulp that Canada is likely to export is that of raspberries and strawberries. There is a considerable production of these fruits in the lower mainland district of British Columbia, the larger proportion of which is sold in the fresh state on the Canadian home market. Several hundred tons are, however, available for pulping to meet an export demand if that were warranted by market conditions. Sales of the pulp in the United Kingdom have hitherto been handicapped by the fact that it was

(*Continued on previous page.*)

Gathering and Picking Apples. Careful Handling commences in the Orchard. Note the Type of Ladders, Picking Bags and Orchard Boxes, which all lend themselves to minimum bruising.

Canadian Honey

View of a Canadian Apiary.

CANADA IS a wonderful country for bee-keeping, and the honey is of high quality. Until quite recently bee-keeping was practically confined to Ontario, Quebec, and British Columbia, but there are large areas yet unexploited; this is especially true of the Western Provinces.

Our attention has been drawn to an article in *Canada* by the Dominion apiarist, Mr. C. B. Gooderham, who states that the introduction of sweet clover into Manitoba and Saskatchewan is largely responsible for the increase in bee-keeping in these two Provinces. In the Peace River district an experimental apiary at Beaverlodge, Alberta, gave a splendid crop during the summer of 1926. Other pioneer apiaries reported equally good results. In the irrigated areas, where alfalfa and sweet clover are grown extensively, good crops of honey are assured. In British Columbia the fertile valleys offer good opportunities for bee-keeping, especially in the central part of the Province. The older parts of Ontario and Quebec are fairly well stocked with bees, but the newer parts offer what is practically an undeveloped field.

Undoubtedly the honey industry is at a comparatively early stage of development, but the prospects are bright. Canadians have fortunately recognised the value of standardising, and the adoption of systematised grading and packing by the Ontario Honey Producers' Co-operative, Ltd., has been followed in other parts of the Dominion. The result is that Canadian honey is making a name for itself in the markets of the world; also, the export trade to the United Kingdom, which was practically non-existent prior to 1924, has rapidly developed.

The Handling and Marketing of Unpreserved Cream

By L. J. LORD.

WHILE IT is the advent of really warm weather that will emphasise to the fullest extent the changed position in regard to the marketing of cream, there are already indications of a much restricted and erratic trade in this perishable food product.

Distributors who can get their goods into the hands of the retailer under conditions where the latter completes delivery to the consumer without loss of time will be able to hold the trade, provided the cream is in good keeping condition when it comes into the distributor's hands—and when it leaves them. It is between these two points where the danger lies, supposing the cream has been produced and prepared under the best possible methods, for if there is anything lacking in the completeness with which the milk and cream has been treated at the start, there is little hope of success.

Let us first examine the position from the point of view of what is required in cream marketed for the purpose of being consumed as such.

The requirements, in order of importance, are:

1. Good keeping qualities.
2. A smooth, fairly thick consistency.
3. A high fat content—*i.e.*, "rich" quality.
4. Good whipping properties.

Now, all these good points, except one, could be easily assured under the old régime when preservative, in the shape of boric acid preparations, was allowed. That is to say, the purchaser knew that any number of suppliers could let him have good cream of average fat content—50 per cent. milk fat—at a reasonable, competitive price. If he wanted specially rich cream, it could be obtained at a slightly enhanced price. And good, sound cream could be got from

Straining Honey to remove Wax Particles.

long, oversea distances—Ireland or the Continent—in first-class condition.

To indicate how changed the situation has become for everybody, it is only necessary to point out that the wholesale trade association dealing with this particular delicacy advises its members to sell cream only under the following proviso:

> We guarantee to deliver CREAM SWEET to Buyer's Station, but as, under the new Regulations, it contains no Preservative, it is for immediate sale and consumption.

the above being attached to the consignment in the form of an adhesive label. Further, it will be seen that trade quotations take the form of "Fresh Cream," or simply "Cream," and "Sterilised Cream."

Apparently, then, the keeping qualities of fresh cream, or, simply, cream, are no longer assured by the vendor. Especially is it plain that consignments to travel a long distance cannot be confidently sent away as likely to be beyond reproach any length of time after reaching their destination, and that such unprotected cream, possessing all the four good qualities enumerated, either loses them, or has them superseded by some other bad quality, or natural changes effected in the passage of time.

What actually happens, to extinguish or render negative the value of the properties still held by the cream, is that it becomes sour, and thereupon of no value as sale cream.

How, then, does "sterilised" cream comport itself in relation to the properties formerly possessed in some degree by all classes of market cream.

As regards the first, the "good keeping" qualities, no doubt it is unassailable if the process of sterilisation has been efficiently carried out and the product subsequently safeguarded from contamination.

In requirement number two, the sterilised cream will be sadly lacking. Cream of anything below a very high degree of fat content becomes very thin under the extreme process of sterilisation, owing to the effect of the heat on the physical condition of the cream, the viscosity being permanently reduced. As a matter of fact, a very moderate degree of heat, equal to the lower temperatures of pasteurisation, is sufficient to thin cream so effectively that the original consistency cannot be regained except by the use of special thickening agents. These are not necessarily substances that have thickness of their own to impart, but anything that imparts or induces thickening by its introduction into the cream was forbidden long before boric acid became "taboo."

Now, this question of thickness, which is apparent richness in the eyes of the uninitiated, is a very serious one in the cream trade, if only because of this confusion of understanding in the minds of those who have to be satisfied that they are getting value for their money.

With the use of boric acid, although not in itself a thickening agent, the cream could safely be treated without pasteurisation, so that after a little time spent in thickening, it could be turned out—preserved—of very good consistency at the average degree of richness, and be trusted to travel long distances.

Under existing circumstances, the same degree of thickness requires a much richer cream—say, containing at least one-fifth more fat than in the preserved state—and this is only obtained at markedly higher cost. The more valuable cream *will not travel safely unless it is pasteurised or sterilised*. In both cases it has lost the advantage in viscosity, gained by reason of the higher fat content, and only in the second case can it safely claim to be of assured good keeping quality.

Presumably, there is no need to attempt to put a thick cream on the market, for, except in cases of prompt production and distribution, it cannot be done—that is, according to regulations and in so far as we have examined the question up to this point.

Perhaps the fourth and last property inherent in most of the earlier productions of market cream is of little moment, seeing that it is of far less importance than the others. Actually, the removal of the use of preservative favours the whipping properties of a cream, inasmuch as cream requires to be slightly stale—that is, advancing towards acidity—to whip easily. Absolutely fresh, machine-made cream will not whip until it has been cooled and aged a little.

But sterilisation seriously diminishes the readiness with which cream can be whipped into the condition represented by that term, and if, as is highly probable, the process of sterilisation has included that of homogenisation, under which the globules of cream fat are reduced to an extremely minute size, then the whipping qualities are practically destroyed for all time.

Sterilised cream, then, meets the old requirements in only two particulars, one of which—fat content—cannot speak for itself because it is not apparent to the purchaser.

There are methods, partially effective methods, by which fresh cream can be made to satisfy the market, provided that market is not too far away and the middle man is prompt in delivery; but possibly the matter is of little moment to any but the producer.

It is very certain that no foreign supplies can come into the country with any hope of success unless they are effectively sterilised and the boats are provided with refrigeration chambers, otherwise by the time the cream reaches the home creamery it will be in a most favourable condition to react to the first contamination that must inevitably be introduced in distributing the package. It is still less likely that the home railway companies will provide similar facilities at an expenditure that the traffic can bear. Probably the use of insulated cans will help to solve the difficulty.

Reviewing the whole question, it appears that the position will resolve itself into one in which the areas of cream delivery will be localised and much restricted, and consumers have to resign themselves to being content with a thin sterilised cream instead of the thick, luscious product of earlier days, unless they are in a favourable position to get reliable supplies.

The Salmon Canning Industry

By ERNEST D. CLARK, M.A., Ph.D., DIRECTOR,

AND

RAY W. CLOUGH, M.A., Ph.D., CHEMIST,

North-West Branch, National Canners' Association, Seattle, Washington, U.S.A.

We publish the first part of a series of articles on the Salmon Canning Industry which has been specially written for FOOD MANUFACTURE *by the two most prominent authorities on the subject. They constitute what are probably the most comprehensive articles that have ever appeared on the salmon industry.*

PART I

"Beaver Bill"—an old timer and the Salmon caught by him. Skeena River, B.C.

FOR CENTURIES the Atlantic salmon (*Salmo salar*) has furnished food and sport for the inhabitants of the British Isles. In 1653, Izaak Walton, most famous of anglers, wrote "The salmon is accounted the king of fresh-water fish." At the time he wrote the rivers of Scotland and England teemed with this splendid sport fish, and the genial old fisherman was well acquainted with them both on the hook and on the platter. They furnished him with rare sport and rare eating, and even to-day his disciples will confirm his judgment as they struggle knee-deep in some madcap Scottish stream, with three feet of flashing, gleaming beauty and dynamic energy.

The Decline of the Atlantic Salmon

They used to ascend the principal streams of Northern Europe in large numbers seeking the clear, cool upper reaches in which to spawn. In baronial castle or peasant's hut they made a welcome addition to the diet, while in season. At one time they were so numerous that the free-state of Hamburg found it desirable to issue a regulation prohibiting the serving of salmon to domestics more than twice a week. This regulation is certainly not necessary now; indeed, it is likely that domestics seldom taste the delicious Atlantic salmon at the present price of about sixty-five cents a pound. For, on account of many adverse conditions, the number of salmon running into European rivers has steadily decreased until comparatively few are left.

The early explorers along the Atlantic shore of North America found this same salmon entering the rivers in immense numbers from the vicinity of what is now New York City to Ungava Bay at the north of Labrador. They formed a large part of the food of the natives, who for the most part lived near the rivers, which served as highways for their dug-outs and bark canoes. With their crude fishing methods they made little impression on the large schools coming in from the sea, and the runs were not depleted.

With the coming of the colonists conditions became much harder for the salmon. The white men not only caught the fish for their own use, but made them an article of commerce, salting and shipping them in barrels to Europe. They even used them for fertiliser. Those that reached the headwaters were frequently caught before they had a chance to spawn, while dams too high for them to leap were soon constructed across many of the streams and rivers to furnish power for mills of various kinds. Furthermore, the wastes from these mills, and from the cities which sprang up near them, so polluted the water that the salmon were either killed or driven away without spawning. Under these harsh conditions it was not long before few of these beautiful fish were to be found in the settled sections of the country. The enormous runs that used to ascend the rivers of what is now the New England States and the Maritime Provinces of Canada are a matter of tradition or record only. In the wilder parts of Newfoundland and Labrador they still return in fairly

large numbers, and are shipped, salted or frozen, in small quantities to Europe. A few hundred cases are canned. At the present time the Atlantic salmon is of very little economic importance in the food resources of the world.

However, it is still a fish for anglers, luring the disciples of Walton deep into the forests of Maine and Canada to pit their skill against the wary, hard-fighting king of the rivers. Many a man comes back from such a trip refreshed and made fit for a hard winter's work. Thus the gallant Atlantic salmon still plays an important part in the life of the peoples on both sides of the Atlantic by furnishing an incentive to healthful outdoor sport.

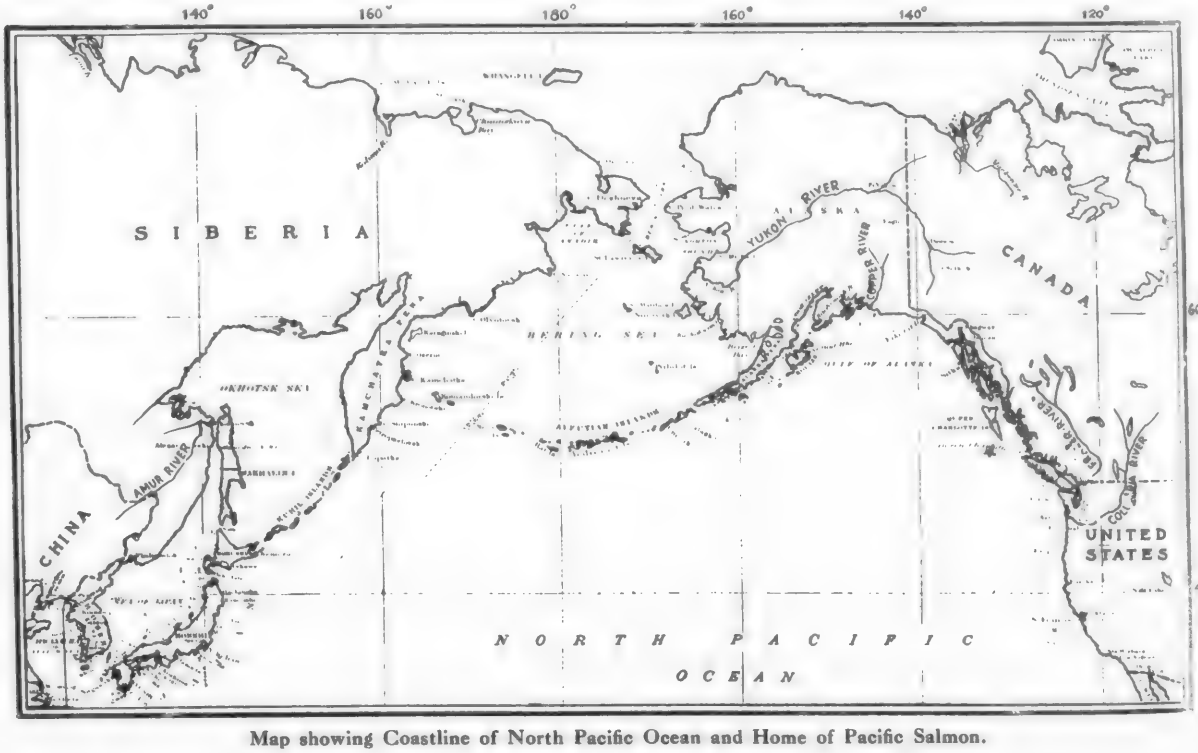
Pacific Salmon—A World Food

So when we speak of salmon as a food, we refer not to the Atlantic salmon, but to the closely related Pacific salmons belonging to the genus Oncorhynchus. These salmon probably furnish sport to fewer anglers, but they do enter into the economic life of the world in a very decided manner. From seven to ten million cases, each containing 48 one-pound cans, or the equivalent, are packed annually and distributed to every corner of the civilised world. The coolie in the rice fields of Java or the epicure in the metropolitan hotel eat canned salmon with equal relish. It goes with the explorer across the endless Arctic ice or through the parched wilderness of Mongolian plateau. Frozen, or subjected to day after day of intense heat, the fish within remains sweet and palatable; where toiling crews build Andean tunnels or lay rails through African jungles, there the can of salmon is found doing its part in spreading civilisation. It would have been extremely difficult to have carried to completion some of the vast engineering projects in the waste places of the earth without the aid of canned foods, particularly in the tropics.

Although the United States, Great Britain, and Canada, in the order named, are the chief consumers of canned salmon, there is hardly a country in the world, however small, that does not import each year at least a few cases of this nutritious sea food. So that on account of its widespread use it may truly be called a world food. Its popularity is not accidental, but rests on a sound basis of palatability, food value, healthfulness, and comparative cheapness.

The Pacific Salmons and the Indian

For centuries before the white man entered the North Pacific Ocean the red man, along the coast and far inland beside the mighty rivers, had been catching the salmon and curing it for use as food during the winter, and it is probable that his yellow brother had been doing likewise, since the salmon is also found along the coast of Asia as far south as Northern Japan. But not as much is known of the customs of the aborigines there. The annual spawning migrations of this splendid fish were seasons of rejoicing for the half-starved natives, who hastened from their winter quarters to their ancestral tribal fishing places. Once more men, women, and children had enough to eat and the dread spectre of famine, which frequently dogged their footsteps through the winter, was banished for a while. But mindful of its probable return, they caught, dried, and stored away thousands of fish. Some coastal tribes, living where



Map showing Coastline of North Pacific Ocean and Home of Pacific Salmon.

Salmon Fishing on Skeena River, B.C. Fishing Boats leaving Cannery for Fishing Grounds. The use of power boats in actual fishing is prohibited and all fishing is done from small boats, as shown, which are towed to and from Fishing Grounds by the "Mother Ship."

the salmon were plentiful, caught more than they needed for their own use and carried on a crude but flourishing commerce with inland tribes, bartering the dried and ground flesh, packed in rude baskets, for skins and other products.

When Lewis and Clarke made their memorable overland journey to the Pacific Coast in 1804-05 they found the "horse-Indians," the Shoshones, Klickitats, and Yakimas of the semi-arid rolling plains east of the Cascade Range, largely dependent upon the salmon for their food. The half-starved white men tried to purchase fish, but found the Indians almost as badly off as themselves, since very little of the previous year's catch was left, and it was not yet time for the salmon to return. Further down, below the dangerous rapids of the narrow mountain valleys, the Columbia River, broad and deep, flows swiftly, but more quietly, toward the ocean, still two hundred miles away. Here the "canoe-Indians" were found, the Chinooks, Clatsops and Cathlamets, paddling from place to place, but having more or less permanent fishing stations. The salmon also formed the principal part of their diet, although the winters were milder and other foods more abundant than east of the mountains.

When, in 1808, the great explorer, Simon Fraser, with his hardy voyageurs, made his arduous way down the river which bears his name, he also found the Indians, gathered at their jealously guarded ancestral fishing-places catching the salmon with crude spears and dip nets and drying them on wooden racks. So plentiful were the salmon that they fairly crowded some of their number out of the water in the narrow places of the river, and the thousands taken by the Indians made no appreciable impression upon the vast "Silver Horde." The Fraser River system includes many large lakes of clear water with sandy and gravelly shores and clear, cold tributary streams, the favourite spawning places of the red salmon, which was the principal species ascending this river.

The same scenes were to be witnessed on most of the hundreds of rivers along the coast, from the Sacramento in California north to the mighty Yukon in Western Alaska, up whose turbid waters the king salmon toils two thousand miles to the clear head-

waters, and here, in the northland, the salmon was, and still is, dried in large numbers as food for the dogs who pull the sleds through the winter snow; and so it may be termed the motive fuel for this region. The salmon was, therefore, the principal food resource of the native populations all along

Indian Fish-Wheel for catching Salmon, Copper River, Alaska.

(Courtesy U.S. Bureau of Fisheries).

the coast and drainage area of the North Pacific Ocean. The salmon was to them what the buffalo was to the Indians of the Great Plains.

Life History of the Pacific Salmons

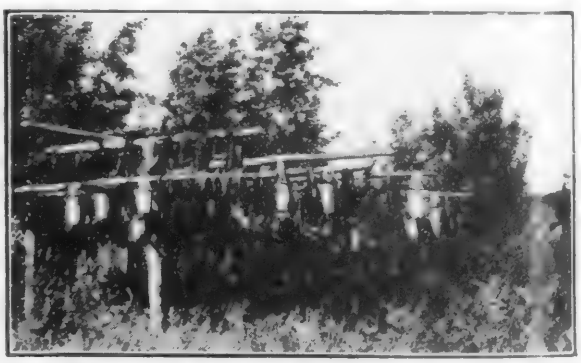
The Indians did not inquire too closely into the reason why the salmon came back year after year. They were grateful to their gods who remembered their needs, and it would have been unwise to have attempted to look behind the scenes. But white men, unhampered by superstition, and using scientific methods, have uncovered much of their life history and found it to be very strange and wonderful. There are some points, however, principally dealing with the life of the salmon in the sea, which even they have not been able to solve as yet.

When the sun, returning northward in the spring, unlocks the frozen mountain streams and lakes and gradually warms the water, millions of tiny salmon eggs buried in the sand and gravel feel the warming

Beach Seining for Salmon, Columbia River.

Indians Spearing Salmon, Fraser River, B.C.

rays and the spark of life within them slowly wakens. The first thing visible in the eggs is the eye of the fish to be, then the backbone and other parts appear, and after a few weeks most of the egg material has been miraculously transformed into a tiny living fish. Now they must emerge from the gravel and seek other food. This is a dangerous time for them. Their enemies swarm about, and a large percentage fall victims to the avaricious Dolly Varden trout and other fish, while birds, like the terns, feast on millions more. Some escape, however, and, learning from experience, become as wary and agile as their enemies. Gradually descending the rivers, stopping for a while in favourable pools or lakes, they approach the ocean. Some go into salt water when only a few months old, while others wait until in their second year, when they may be six inches or even more in length. In the ocean they disappear and little is known of their life there. Some think they swim a long distance to some particularly good feeding



Indian Rack for Drying Salmon, Copper River, Alaska.

(Courtesy U.S. Bureau of Fisheries).

ground, but others believe they stay near the mouth of their river until they become mature, when they follow their instinct and the path of their ancestors back to the stream from which they come. A few are caught outside the mouth of the rivers from time to time all through the year, lending evidence to the theory that they stay near their home river.

Siwash Indians and part of one of their Dug-out Canoes. Salmon fishing boats in background.
(Courtesy of "Pacific Fisherman.")

When the salmon becomes mature they feel an impulse within that impels them to return to fresh water to place their eggs in the sand, perhaps in the very stream in which they began their own life. For certain it is that many do actually return to their own home stream. Following this impulse they gradually approach the mouths of the rivers, their bodies well fattened during their stay in the rich ocean pasturage. And it is at this time, when at their best, and crowded together in large numbers, that they are caught by millions in trap, seine, and net. And it is fortunate for the salmon, also, that they are well nourished, for after definitely starting on the spawning migration they no longer feed but depend upon this stored up fat, whose high food value is attested by the presence of the king salmon in the headwaters of the Yukon, 2,000 miles from the sea. They are really "oil burners."

The Salmon in the Columbia River

Up the majestic Columbia River the chinook salmon swim against the swift current for hundreds of miles, sometimes making thirty to forty miles a day. At each tributary stream some branch off from the main army and ascend it as far as possible or until they find a suitable spawning bed. There the female halts, and by means of tail and fins scrapes a little basin in the sand or gravel in which to place her eggs. The male, following closely and jealously guarding her from other fish which would devour the eggs, helps to make the basin, fertilises the eggs, and then the two join in sweeping sand over them. This scene is repeated on every suitable tributary and little stream all through the State of Washington, up through British Columbia, where the river takes a mighty swing, and back into Montana on the other side of the lofty Rocky Mountains. Here in the headwaters of this noble river, a thousand miles from their ocean home, a few of the hardiest of the chinook, or king salmon, place their eggs in the sparkling sand over which the pure mountain water ripples and splashes. Wearied by their long journey, covered with bruises from their contact with the rough river rocks, the salmon now give up the struggle; their life cycle completed, the new generation provided for, they die. Such is the tragic end of these splendid fish. Many miles from the ocean their tired bodies lie washed upon the banks, the food of bears and eagles, or lodged in some rocky crevice preserved by the ice-cold water as food for the young salmon in the spring. The young never see their parents; one generation is gone before the next arrives. Thus, for a time, that year's run is represented only by millions of eggs tucked loosely in the gravel of thousands of mountain streams.

Can of Salmon opened after Twenty-four Years' Storage. Contents Sterile, of Good Flavour, and Fit for Food.

Puget Sound and Fraser River System

Further north lies the extensive and deeply indented Puget Sound, with several rivers, notable among them the mighty Fraser, up which the salmon struggle through the narrow gorges of the Coast Range to the magnificent lakes of Central British Columbia, the favourite breeding ground of the red or sockeye salmon, which formerly came here in enormous numbers. One peculiar thing, which has never been explained, was the presence of a four-year cycle on this river—that is, each fourth year

several times as many fish come up the river as in the intervening three years. Along the banks of the Fraser and its tributaries, at favourable spots beside falls and rapids where the salmon were delayed, one sees the remains of fishing platforms and drying racks where the Indians caught and prepared their winter's food. Unfortunately, through a number of causes, the salmon no longer enter this river in large numbers, and although some thousands of cases are packed here annually, it has lost its proud position as the principal source of the world's pack of red salmon. Some attempt is being made to build up the runs again by placing small fish, hatched in the lower reaches of the river, in the lakes and streams further up.

British Columbia and Alaska

North of the Fraser River lies the rugged coast of British Columbia and Alaska, with thousands of miles of shoreline and thousands of islands. The shores of the mainland and islands are deeply indented with picturesque fiords, reminding one of the coast of Norway. The thickly wooded shores run up sharply to ragged mountains, many of which culminate in snow-covered, cloud-encircled peaks thousands of feet above the deep-blue waterways. Into these narrow winding fiords flow many beautiful rivers, some wide and deep and capable of navigation for many miles, others narrow and filled with rapids, while others leap in silvery waterfalls, through a filmy spray. In some places enormous glaciers, frozen rivers, thrust their towering fronts into the lapping waves which undermine them, causing immense pieces to break off with a noise like thunder, and small tidal waves to dash out from the glacier front as the icebergs float away. Into these fiords the salmon find their way, usually unseen beneath the surface, but now and then revealing their presence by bold leaps into the air. Up the rivers they swarm until they find a place to suit them, or until they are stopped by some obstacle which they cannot surmount. Their persistence is so great, however, that they usually will not admit defeat until they are completely exhausted and badly bruised. Their ability to leap falls is astonishing; falls fifteen feet in height have been surmounted at a single leap, and rapids much higher where opportunity was afforded for rest at intervals. At every stage of their toilsome journey danger awaits them. Big brown bears wade out into the riffles (shallow places) and dexterously toss the salmon on shore with a single sweep of their strong paws, and like some greedy human fisherman they are not content to catch enough for their needs, but with seeming delight continue to catch the fish, only to leave them to waste on the river bank. They have been known to throw out over a hundred fish in a single morning. Then as the gallant salmon struggle up some rapid where the water is very shallow and they are partly exposed, gulls and eagles pick out their eyes, and the sightless fish perish in blind and fruitless rushes. Truly, it is a wonder that any of them escape to lay their eggs in the upper reaches of the rivers.

Fifteen hundred miles to the westward, past the bold headlands of Kenai Peninsula, past Katmai Volcano, which, in 1912, filled the air with ashes for a thousand miles and darkened the sun for weeks, past the bare rocky mountains of the Alaska Peninsula, we come to Unimak Pass and slip through into Bristol Bay, the world's chief fishing ground for red salmon. Emptying into this bay are many rivers, most of them short and rather placid, winding through low, flat, tundra-covered land from immense lakes well suited for spawning. It is the ideal breeding place for this species of salmon, and they come here in untold numbers every year.

Along the coasts of Kamchatka and the shores of the Okhotsk Sea, in Siberia, as far south as the Amur River, the various species of salmon are found running into the many rivers and furnishing the natives and their dogs with much of their food. A few are also caught in Northern Japan.

Every Scale Tells a Story

The salmon carries his life history written on his scales. Scientific workers are able to tell how long the salmon stayed in fresh water, whether conditions there were good for him as regards abundance of food, how long he lived in the sea, and therefore how old he was when caught. This information is gleaned from a study of the rings on the scales, which continue to increase in number with the age of the fish. The position of these rings, whether close together or far apart, tell the story to the experienced examiner. This method of reading the age is somewhat similar to that used in studying the age of trees by means of their annular rings of growth, only in the case of salmon several rings are laid down each year. Since this method of reading the scales of salmon has been used, much, hitherto unknown, has been learned of their life history and it has proved of great value.

(To be continued.)

(Continued from next page.)

been hard to live down. Unsatisfactory plant and out-of-date methods are also largely to blame. These and other factors have made capitalists chary of investment. Evidently entire reorganisation seems needed. Speedier methods, combined with refrigeration, are required for the transport of raw material to the treatment plants. Then also these plants might function as installations merely for reducing bulk and otherwise preserving the raw material, the final stages only being carried out at some central plant.

So far as the United Kingdom is concerned, there would seem to be an important market in Canada for those products described above. Alternatively, machinery and equipment are required for dealing with the enormous tonnage of material caught off Canadian shores.

The Fish By-Product Industry in Canada

UNDER THE auspices of the Canadian Natural Resources Intelligence Service, a useful summary of the present position and future prospects of the above industry has recently been issued.

Attention is first drawn to the large tonnage of fish which, for one reason or another, is rejected as unfit for human food; for example, the figures for 1918 are given as 250,000 tons. It is pointed out how profitable this by-product industry has become in other countries, whereas in Canada it has received surprisingly little attention.

The number of by-products from fish and the uses to which they can be put are numerous. Fish oils generally are absorbed by soapmakers and hydrogenated. Fishmeal, containing protein of high nutritive value, and also phosphate of lime, is an important stock-feed when carefully prepared from selected material. Fish guano is made from the more oily fish, and finds a ready sale.

Cod-Liver Oil

Special attention is devoted in the report to this special branch of the industry. In the past the bulk of the oil produced in Canada has fallen into the grade known commercially as "cod-oil," being a mixture of crude liver oils from mixed fish, cod, hake, haddock, and so on. On the other hand, Norway and Iceland have devoted their attention almost exclusively to the production of the "medicinal" grade of cod-liver oil. For this latter purpose it is essential that the livers be treated when perfectly fresh; moreover, the fish must be caught at the season when the vitamin-content of the livers is at a maximum—namely, just prior to spawning time.

Having obtained supplies of fish in suitable condition, the modern idea is to treat the livers within three hours of the catch, the extraction processes being mainly concerned with means for preventing oxidation. These processes are now so nearly perfect that it is probable that variations in vitamin-content are due to the seasonal and other changes in the marine plants, which are the actual source from which the cod derives its store of "accessory factors."

In Norway, the crude oils are shipped in bulk to a few centres, such as Bergen, where the refining processes are carried out. Similar refineries have recently been established in Newfoundland, and have been instrumental in the production of an oil which is now acknowledged to be quite as good as the Norwegian material. There seems to be no valid reason why the industry should not prosper in Canada, given the necessary organisation.

Fish Glues

These adhesives possess one or two outstanding advantages over animal glues: they are soluble in cold water and are ready for immediate use. For one or two special duties, fish skin glue is absolutely essential. These glues are also useful for purposes where a flexible joint is required, as in bookbinding; whilst the fact that no preliminary preparation is needed, makes them handy for various purposes.

Fish glue can be made from any species of fish, but in practice certain species, such as cod, hake, and haddock are most widely employed. The highest yield of glue comes from the skins: trimmings and heads yield smaller but still useful amounts. With regard to the method of manufacture, this consists in removal of salt; then the material is cooked, with the addition of a preservative, and also of an acid to hasten hydrolysis. The filtered liquor is evaporated, either under vacuum or in open pans, until the desired viscosity is reached. Finally, further preservatives, such as phenol, and essential oils, like wintergreen, are incorporated. The residue, containing over 50 per cent. of protein, is an excellent poultry food.

The value of the raw material worked up in Canada for this purpose in 1923 was about 15,000 dollars, whilst the imports of fish glues were worth six times this sum.

Isinglass

This material is not made in Canada. It is a special form of gelatin prepared from certain layers of the air-bladders or "sounds" of fish. The best known Russian varieties are prepared from the sturgeon and carp, but various other species are used in Iceland, Newfoundland, and America. In the States the best grade is made from hake. The "sounds" are removed as the fish is dressed, and if transported any distance they must be immediately salted in barrels. At the factory they are split open and air-dried; later they are soaked, chopped, macerated, and rolled into sheets. These are passed through ribbon rollers, the ribbons being quickly dried and wound on wooden spools.

Isinglass was at one time chiefly used for the clarification of beer, and is still used with this object in wines. For most edible purposes it has been replaced by gelatine, but it still finds applications for various technical purposes.

Conclusion

Some of the disadvantages from which the Canadian industry has suffered are outlined. Though fishing is carried on to an enormous extent, the coast-line is very great, and it becomes difficult to choose suitable locations for the necessary by-product plants. Then also such plants as already operate are situated at great distances from the consuming markets. The industry has in the past suffered serious setbacks owing to its selling inferior products, thus creating an evil reputation which has

(*Continued on previous page.*)

A Recipe for the Manufacture of a Good, Cheap Lemon Cheese

A really reliable article may be made in the following manner:

3 lbs. of dried egg yolk,
3 lbs. of dried egg albumin,
12½ lbs. of flour,

are each rubbed in a gallon of water and allowed to stand all night. Next morning they are mixed together and strained through a 30-mesh sieve.

The boiling process is as follows: 8 lbs. of margarine (or a mixture of equal parts of butter and margarine may be used with advantage) are melted in a 40-gallon steam pan, and then 56 lbs. of glucose added, and the mixture brought to the boil. Then 70 lbs. of sugar are added and dissolved. Next the egg mixture, produced as above, is stirred in, 1 lb. of salt added, and the whole boiled for a few minutes; then steam is turned off, and 1½ lbs. of citric added and dissolved in the mixture. The whole is then passed through a fine copper sieve and allowed partly to cool.

Finally, 4 ozs. of a really good oil of lemon and about 1 drachm of oil of lime are added; the mixture is suitably coloured with a rich egg-yellow colouring agent and filled into containers before it has had time to cool.

Abstracts of Papers read before the Society of Public Analysts on Wednesday, April 4, 1928.

Coffee Parchment as an Adulterant of Bran and Sharps. By John Evans, F.I.C., and T. E. Wallis, B.Sc., F.I.C.

The practice of adulterating bran and sharps with coffee parchment husk has recently been revived. The "parchment" consists of the thin and tough endocarp of the coffee fruit, and may be recognised by its distinctive cellular structure. When added to sharps it is usually finely comminuted, and in testing a sample a few of the suspicious pieces should be boiled with chloral hydrate solution until transparent, and a fragment mounted in chloral hydrate for microscopical examination.

Determination of the Colour-producing Constituents of the Cacao Bean. By W. B. Adam, M.A., A.I.C.

The two principal colour-producing constituents in the cacao bean are cacao catechin and cacao tannin. The former has been extracted with ether (after previous removal of fat and exanthine base) and determined colorimetrically by means of Mitchell's ferrous tartrate reagent, whilst the cacao tannin is extracted with hot water and determined by precipitation as cinchonine tannate. Analytical figures are given showing the percentages of catechin and tannin in the principal classes of cacao beans. The work has shown that the catechin is destroyed during fermentation, and the tannin is reduced to about 2 per cent.

Trade Publications

The "Aldine" Engineering Co., School Lane, Rochdale.—A pamphlet briefly describing a machine for the making of ice-cream.

Tangyes, Ltd., Cornwall Works, Birmingham.—A booklet illustrating the various Tangye plants that have been installed in different parts of the world.

The Diagraph Stencil Machine Co., Ltd., 107 and 108, *Upper Thames Street, London, E.C.4.*—A pamphlet dealing with the "Diagraph," a modern labour-saving machine for cutting flexible oilboard stencils for marking cases, drums, barrels, etc.

Fredk. Braby and Co., Ltd., Petershill Road, Glasgow.—New catalogues giving particulars of steel barrows of all types, steel sheets, iron sheets, galvanized sheeting, storage bins, and so on.

The Sturtevant Engineering Co., Ltd., 147, *Queen Victoria Street, London, E.C.4.*—Publication No. 1235 is a well-illustrated and attractive booklet of eighty pages, giving a résumé of the fan systems and apparatus made by this company. Publication No. 1054 has likewise just been issued, and contains a number of interesting illustrations depicting the use of various types of the Sturtevant fans in different branches of industry.

A. J. T. Taylor, Africa House, Kingsway, London, W.C.2.—An elaborate and carefully compiled booklet giving particulars of Ruths Steam Accumulator, which is stated to offer in every industry great possibilities of improving productive and thermal efficiency. Its function is "to take care of the variations in steam demand and for building up a reserve of thermal energy, instantaneously available for the service of the manufacturing plant," thus meeting the wide fluctuations in load usual in factories.

A. Boake, Roberts and Co., Ltd., Carpenter's Road, Stratford, London, E.15.—The April, 1928, price list of the essences, essential oils, colours, chemicals, etc., manufactured by this firm.

We note that Wm. Gardner and Sons, Ltd., engineers, of Gloucester, are to exhibit, stand No. 108, at the Chemists' Exhibition, Holland Park Hall, London, from May 7 to 11.

Please Note

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Enquiries

The following are extracted from letters we have lately received. We shall be glad to put interested parties in touch with the writers, or to insert replies in the Correspondence columns.

* * *

27. "We shall be glad to know if you can inform us who are the makers of Potato Cutting and Peeling Machines, in connection with the manufacture of Potato Crisps, as we have an inquiry from a client."

* * *

28. "We should be glad to know if you could give us the name and address of any firm or person who produces non-alkaline Precipitated Calcium Carbonate. At the same time, perhaps you could let us have the names of two good Talc Manufacturers."

* * *

29. "We have a very large jam works who are anxious to get into touch with a firm who are in a position to supply a cardboard jam container which is sufficiently strong to carry 7 lbs. of jam. They inform us that they have so far not been successful in finding a suitable English firm, although this type of container is at present being used in the States. Can you put us in touch with a likely house?"

* * *

30. "With reference to preservatives in food, we understand there is a fresh one that has lately come out, which contains no SO_2, and conforms in every way with the Government requirements, and it has a wonderful effect in preserving all food without detriment to the food or to the consumers. Can you give us any particulars of this material and the firm supplying it, as we understand it is now being taken up largely both here and abroad, as it has got over the experimental stage?"

* * *

31. "Can any reader of your Journal supply the address, aims, objects, etc., of the 'Food Industries Bourse International'?"

* * *

32. "A client of ours has asked us to recommend him the best firms from which to buy Vinegar Caramel. Will you kindly send us this information?"

Correspondence

To the Editor.

DEAR SIR,

Our attention has been drawn to an article on page 297 of your March issue headed "Acid Calcium Phosphate."

We notice that all other articles in your paper except news items and advertisement matter acknowledge their authorship, so we assume that the writer of the article has his own reasons for preserving his anonymity.

We must protest against your publication of this article, which is so entirely misleading at a time when an inquiry is still proceeding under the provisions of the Key Industry Act, the first hearing thereof having been on January 17 last. In these circumstances we do not feel that we are justified in embarking on a full reply, but in reference to American manufacturers we think it should be understood that America was the pioneer of pure food laws, and has regulations certainly as stringent as in this country governing the foodstuffs industry, and any acid calcium phosphate, American manufactured, imported into this country is of the highest quality and purity, and, moreover, they were the first producers of 80 per cent. strength, and only within the last few years have the English manufacturers succeeded in attaining this standard.

The present inquiry under the K.I.D. has relation purely to the question of duty on imported material. Presuming the decision be come to that acid calcium phosphate be liable to duty, then it would be the duty that would exclude American material, and it would certainly not be prohibited because of it being below the standard of purity required by the standards of the Food and Drugs Act, or because of its inferiority to acid calcium phosphate of British manufacture; and it is interesting to note that all leading American producers guarantee their material to conform to the requirements of every Food and Drugs Act in existence throughout the world.

The implication that English manufacturers are asking the Board of Trade to certify the material as a fine chemical simply to ensure the highest degree of purity possible, and for no other reason whatever, must be reassuring to buyers of acid calcium phosphate!

Yours faithfully,
CHAS. PAGE AND CO., LTD.
DAVID T. BOYD AND CO., LTD.

P.S.—We should add that our firms are the largest importers of American acid calcium phosphate into this country and have been so for very many years now, and we are the opponents in the case at present under review.

* * *

To the Editor.

DEAR SIR,

May I be allowed to draw your attention to a misleading statement in the article entitled "History of Food Laws," in your current issue.

On line 22, the second column, on page 315, Mr. Joyce, referring to the Sale of Food and Drugs Amendment Act, 1879, states that: "The Act makes it clear that an article of food sold must be of the nature, substance, and quality of the article demanded —all three, not only one or two of them." This is incorrect. If the article of food or drug was defective in nature or in substance or in quality it would not be a good defence to prove that the article was not defective in all three respects.

This Amendment to Section 6 of the Sale of Food and Drugs Act, 1875, was rendered necessary on account of a decision in a Scottish Court, where it was held that the words, "nature, substance, and quality," could not be disjoined, and that it was necessary, in order to secure a conviction, that the article in question should be defective in all three respects.

Yours faithfully,
H. HOLDEN.

Trade News

New Canning Factory at Berwick, Nova Scotia

THE Western Canneries Maritime, Limited, have established a factory at Berwick, King's County, and are putting on the market raspberry, gooseberry, and strawberry jams, jellies, and mincemeat.

Edmonton's New Canning Industry

Peas, beans, and spinach will be canned in large quantities at Edmonton, Canada, next year, according to information issued by the Department of the Interior at Ottawa. The Broder Canning Company, the first of its kind to establish in Edmonton, is planning extensive operations at its new plant, which will be placed in operation next spring. The company has leased some 800 acres of land for vegetable supply purposes, embracing properties on both sides of the Saskatchewan River, east of the city. The leased property includes some 500 acres on the farm of A. R. Gillies at Clover Bar, which will be seeded to peas next spring. Then there are 300 acres on various farms north of the Saskatchewan, which it is planned to utilise mainly for peas, beans, and spinach. Tomatoes will be shipped in from the interior of British Columbia for canning.

New Cold Storage Terminal

Construction of the cold storage warehouse and fishing pier proposed by the Cold Storage Terminals, Ltd., of Halifax, will be started soon.

It will consist of six units: General cold storage; apple and potato pre-cooling and storage; fish cold storage and processing; fish landing; ice making and bait freezing; and fish offal reduction plant for the production of fish meals and oils. A dock will be reserved for the fishing fleet. The catch will be unloaded from the vessels into the fish warehouse with a system of mechanical conveyors.

Revised Regulations for Preserved Fruits, Vegetables and Milk

The *Canada Gazette* of February 11 publishes copy of an Order in Council of February 4, 1928, containing the revised Regulations governing the importation, exportation and inspection of preserved fruits, vegetables, and milk, in substitution of the Regulations established by Order in Council of August 27, 1920, as subsequently amended.

The revised Regulations deal more fully with "definitions" of fruit and vegetables; labelling; grading—quality and quantity.

The complete text of the revised Regulations may be seen on application to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1.

Proposed Merger of Chain Stores in Canada

Arrangements are being completed for the amalgamation of the Pure Food Stores, Ltd., 10, Ontario Street, West, Montreal, Quebec, and the Arnold Bros., Ltd., 124, Queen Street, East, Toronto, Ontario. The new Company will be known as the Consolidated Food Products, Ltd., and will have an authorised capital of 200,000 shares, without nominal or par value. The shareholders of the Pure Food Stores, Ltd., will receive two shares of the new common stock for each share now held and shareholders of Arnold Bros., Ltd., will obtain one share of the new common stock for each share now in their possession.

The development will involve the merger of 126 stores, of which 68 are now operated by the Arnold Bros., Ltd., and 58 by the Pure Food Stores, Ltd.

Pearls from British Columbia Fish

A recent discovery gives promise of adding considerable revenue to the fisheries of British Columbia, one of the largest industries of the Province, which already has an annual yield valued at over $25,000,000. Scientists have found that lustrous pearls can be made from an essence derived from the scales of herrings, which are very plentiful in the North Pacific off the coast of British Columbia.

Recently a plant was established at Nanaimo, B.C., for the manufacture of this essence, with technical experts from New York in charge of the operation of the plant, which is equipped to handle ten thousand pounds of herrings' scales daily. The first shipment of the essence has been made to New York, where it is being converted into artificial pearls with, it is said, a lustre that compares favourably with the hitherto incomparable product of the oyster.

Until this plant was opened, thousands of tons of the scales of herrings were being annually dumped into the sea by the herring salteries on the British Columbia Coast because they were considered valueless. Now there is as ready a market for these scales as there is for British Columbia fish, fruit, lumber, and minerals—the four principal products of the Province.

Hong Kong Market for Dried, Smoked, Salted, and Canned Fish

Fish, tinned, dried, and salted, constitutes one of the most important food products of South China, and for the great majority of the population it is the pre-eminent staple, surpassed only by rice in the amount consumed.

In spite of the large coastal and deep sea fishing industry, local supplies do not satisfy the demand, and during the past few years extensive quantities have been imported from the United States and Canada.

The native preference seems to be for the imported fish, this being especially true in salt fish because prices of imported fish have often been no more than for those locally caught. In packed fish this is also true, but due in this case to superior qualities and methods of canning over the local way, prices being fairly equal, imported or local.

Among canned fish, sardines in tomato sauce are reported to be the most popular variety, followed by

herring and salmon. In general, very little attention is paid to the grade of fish so long as that received is of good quality—that is, for example, red salmon will not, as a rule, be preferred over pink if there is a higher price for the red. This is true also of the source of the fish, there being for the most part no differentiation between European and American varieties. However, the Chinese buyer is ultra-conservative, and when he finds a brand of fish that satisfies him as to quality and price, he will consistently purchase that brand thereafter so long as its quality and price remain good. For this reason a well-advertised "chop" or brand name is important in this market.

Salt fish imported from Puget Sound is usually shipped as deck cargo during the cool season (November until March). Shipments are usually prepared directly from the catch in the United States, being dumped into boxes or barrels, salted down, and nailed up. Removal of entrails and drying of the fish is done after its arrival. It is, of course, impossible to make shipments as refrigerated cargo at competitive prices, but several importers report that a number of shipments have been received as deck cargo during the summer season in good condition, but that 5 to 10 per cent. more salt preservative must be used in the warm season.

The New German Foodstuffs Labelling Decree

In November 18, 1927, issues of the *Canned and Dried Foods News* and of the Fishery News Service sections of *Foodstuffs Round the World*, a translation of the text of the new German food-marking regulations was included. A study of these regulations as presented has given rise to a number of questions which were transmitted to the Berlin Office of the Bureau for reply. The questions have been answered by the German authorities and, under date of March 21, a reply to these questions was received from the Berlin office of the U.S. Bureau of Foreign and Domestic Commerce.

The original regulations specify that foodstuffs in packages or containers brought into trade by others than the producer must carry the other's individual or firm name *instead* of the producer's. We are advised now that the name of the manufacturer *may be shown* in addition to that of the seller, which *must be shown*. By seller or distributor is meant anyone marketing a product under his own or a firm name other than that of the manufacturer. The place of business of anyone other than a manufacturer who markets the products *must* be shown.

The second section of paragraph two of the regulations contains a number of regulations regarding the marking of the quantity of contents. We are now informed that the regulations will not be enforced so as to make any provisions for tolerances. In other words, the minimum net contents must be stated, and it will be unsatisfactory to use statements such as "about" or "approximately." In the case of products packed with liquids, such as sardines in olive oil or fruits in syrup, the net weight of the *solid material* must be declared and not the total weight as is the practice in the United States. This is practically a requirement for the declaration of the drained weight of such products. With many items investigations have been carried on and standards set for the drained weight, so that no serious difficulties should result from the enforcement of this regulation. It must be borne in mind, however, that the minimum weight must be declared.

It is not the intention of the regulations to eliminate English descriptions and weight statements. English designations or descriptions alone are permitted if they are the customary designations of the product in Germany, and if their translation into German might, therefore, cause confusion.

In the last few years there has grown up a rather extensive practice of repacking certain kinds of canned goods. With regard to the labelling of the origin of such products, we are informed that no general rule has been laid down, and that the German authorities reserve the right to consider each case on its own merits.

The regulations prescribe two standard size cans, respectively, for fruits and vegetables. The volume of these cans—namely, 900 and 850 cubic centimeters—is taken as the content with the top in place. The use of these cans is not obligatory, but if they are used the larger must be used for vegetables and the smaller for fruits. Larger and smaller sized cans are also described. In each case different volumes for fruits and vegetables are specified, which are proportional to the standard sizes above mentioned.

(*Continued from next page.*)

Voluntary Liquidations.

(Voluntary liquidations may, in some instances, refer to companies in course of reconstruction.)

NATIONAL CLEAN MILK SOCIETY (Incorporated). Resolved, March 14, 1928, that the company be wound up voluntarily, and that Mr. R. H. Hoare, of Norfolk House, Norfolk Street, Strand, W.C., be appointed liquidator.

VITAMINS, LTD. (in liquidation). Resolved, March 24 1928, that the company be wound up voluntarily, and that Mr. R. A. Hamlyn be appointed liquidator. (This notice is formal to comply with the Companies Acts. All creditors have been, or will be, paid in full.) Claims to liquidator, Mr. R. A. Hamlyn, of 80, Bishopsgate, E.C.

Advertisement of Cancelling.

The Registrar of Friendly Societies has, pursuant to the Industrial and Provident Societies Act, 1893, cancelled the registry of the BRITISH SUGAR BEET SOCIETY, LTD. (Reg. No. 5976 R., London), held at 28, Westminster Palace Gardens, S.W.1, at its request. The Society (subject to the right of appeal given by the Act) ceases to enjoy the privileges of a registered society, but without prejudice to any liability incurred by the Society, which may be enforced against it as if such cancelling had not taken place. (Dated March 28, 1928.)

Commercial and Legal News

(The Editor does not accept responsibility for any errors which may occur in the following notices.)

New Companies

WRIGHT COOPER, LIMITED. (229216) Regd. Mar. 28, 1928. To carry on the bus. of confectioners, etc. Nom. Cap.: £5,000 in 3,000 pref. shares of £1 and 8,000 ord. shares of 5/-.

ROBERT CURTIS AND CO., LIMITED. (229168) Regd. Mar. 27, 1928. 4, Horsefair Street, Leicester. To take over the bus. of a confectioner and genl. food provider cd. on at 122, Bridge Road, Leicester, by Mary A. Bennett. Nom. Cap.: £20,000 in £1 shares.

JOHN CLAYTON (WINDERMERE), LIMITED. (229164) Regd. Mar. 27, 1928. Crescent Road, Windermere. To take over the bus. of a butcher, etc., cd. on at Windermere. Nom. Cap.: £5,500 in £1 shares.

J. HARGRAVES AND SONS, LIMITED. (229149) Regd. Mar. 26, 1928. To take over the bus. of wholesale grocers and provision mchts. cd. on at Whittaker Street, Barrow-in-Furness, as "J. Hargraves and Sons." Nom. Cap.: £7,000 in £1 shares.

E. PREVIDI, LIMITED. (229026) Regd. Mar. 22, 1928. 11, Museum Street, W.C.1. To carry on the bus. of dairymen and provision mchts., etc. Nom. Cap.: £500 in £1 shares.

BERKSHIRE DAIRIES, LIMITED. (229064) Regd. Mar. 23, 1928. 10, High Street, Hampton Wick, Mdx. To carry on the bus. indicated by the title. Nom. Cap.: £660 in £1 shares.

JOHN HOLLAND AND SONS (SOUTHPORT), LIMITED. (229449) Regd. April 4, 1928. 23a, Cross Street, Southport. To take over the bus. of wholesale confectioners, etc., now cd. on at Southport, as "Hoare and Wensley, Successors to John Holland and Sons, Ltd." Nom. Cap.: £2,000 in £1 shares (500 pref. and 1,500 ord.).

SPRATT AND COMPANY, LIMITED. (229385) Regd. April 2, 1928. To carry on the bus. of wholesale and retail butchers, etc. Nom. Cap.: £1,000 in £1 shares.

EAST COAST ICES, LIMITED. (229373) Regd. April 2, 1928. To carry on the bus. indicated by the title. Nom. Cap.: £3,000 in £1 shares (2,000 pref. and 1,000 ord.).

E. EDWARDS, LIMITED. (229273) Regd. Mar. 30, 1928. To carry on the bus. of mnfg., export, wholesale and retail confectioners, etc. Nom. Cap.: £5,000 in £1 shares (2,000 pref. and 3,000 ord.).

S. AND S. PRODUCTS, LIMITED. (229253) Regd. Mar. 29, 1928. 94, St. John Street, Smithfield, E.C. To carry on the bus. of wholesale and retail grocers, provision dlrs., etc. Nom. Cap.: £300 in £1 shares.

"DAWS" FRUIT CORDIALS, LIMITED. (229616) Regd. April 12, 1928. 78, Claybrook Road, Fulham, S.W. To carry on the bus. indicated by the title. Nom. Cap.: £100 in £1 shares.

JOHN HOLMES' CONFECTIONS, LIMITED. (229623) Regd. April 12, 1928. To take over the bus. of a mnfg. confectioner cd. on at Fern Road, Wolverhampton. Nom. Cap.: £6,000 in £1 shares.

INNS' STORES, LIMITED. (229519) Regd. April 7, 1928. 23, Barnsley Road, Goldthorpe, nr. Rotherham. To take over the bus. of a grocer and provn. dlr. cd. on at Goldthorpe and elsewhere as "Inns' Stores." Nom. Cap.: £1,000 in £1 shares.

GEORGE HOGBIN AND SON, LIMITED. (229562) Regd. April 10, 1928. 8, Calverley Road, Tunbridge Wells. To take over the bus. of a baker, confectioner, and restaurant propr. Nom. Cap.: £5,000 in £1 shares. (Cd. on at Tunbridge Wells.)

K.K.K., LIMITED. (229452) Regd. April 4, 1928. To carry on the bus. of sauce, pickle, and jam mnfrs, etc. Nom. Cap.: £100 in £1 shares.

TABLE DELICACIES, LIMITED. (229534) Regd. April 7, 1928. 216, High Street, Stratford, E.15. To carry on the bus. indicated by the title. Nom. Cap.: £1,000 in £1 shares.

PALMER BROS. (BISCUIT MANUFACTURERS), LTD. (228797) Regd. Mar. 14, 1928. To carry on the bus. indicated by the title. Nom. Cap.: £25,000 in £1 shares (10,000 pref. and 15,000 ord.).

LYMM SUPPLY STORES, LIMITED. (228744) Regd. Mar. 12, 1928. Booths Hill, Lymm, Ches. To take over the bus. cd. on at the Lymm Supply Stores, Lymm, and to carry on the bus. of provn. and genl. dlrs., etc. Nom. Cap.: £100 in £1 shares.

London Gazette Information

Merchandise Marks Act:

Apples and Pears.

The report on apples and pears of the Standing Committee set up by the Minister of Agriculture and Fisheries, the Secretary of State for the Home Department, and the Secretary of State for Scotland, acting jointly, has now been presented, and copies of the report will shortly be obtained through any bookseller or directly from H.M. Stationery Office.

Joint Stock Companies.

At the expiration of three months from March 30, 1928, the names of the undermentioned Companies will, unless cause is shown to the contrary, be struck off the Register, and the companies will be dissolved:

Bonovin, Ltd.
British Wine Manufacturing Co., Ltd.
Chocolat Lambert, Ltd.

Reduction of Capital.

MAYFAIR HOTEL CO., LTD., and Reduced. The Order of the High Court, Chancery Division, dated April 2, 1928, confirming the reduction of the capital of this company from £405,000 to £100,000, and the minute approved by the Court showing with respect to the share capital of the company as altered the several particulars required by the Act were registered by the Registrar of Companies on April 14, 1928.

(Continued on previous page.)

Current Literature

Fruit and Vegetable Products

Fruit Jellies, V.—Rôle of Pectin, I.—Viscosity and Jellifying Properties of Pectin Solutions. P. B. Myers and G. L. Baker. (*Univ. Del. Agric. Exp. Sta. Bull.* 1927, No. 149.)

Relation of Atmospheric Humidity to Deterioration of Evaporated Apples in Storage. C. W. Culpepper and J. S. Caldwell. (*Jour. Agric. Res.*, 1927, 35, 889.)

Occurrence of Acetaldehyde in Bartlett Pears and its Relation to Pear Scald and Breakdown. C. P. Harley and D. F. Fisher. (*Jour. Agric. Res.*, 1927, 35, 983.)

Handling Tomatoes so the Pack will Grade Fancy. J. H. McGillivray (*Canning Age*, 1928, April, 371.)

Waterless Processing of Glass Packed Vegetables. K. L. Ford and A. G. Osborne (*Canning Age*, 1928, April, 401.)

Some Factors Influencing Corrosion in Canned Fruits. E. F. Kohman and N. H. Sanborn. (*Canner*, 1928, March 31, 17.)

Cereal Products

Baking Value of Flour. Braun. (*Ann. Falsif.*, 1927, 20, 588.)

Different Chemical Constituents of the Crust and Crumb of Roman Wheat Bread. L. Settimj. (*Annali Chim. Appl.*, 1928, 18, 19.)

Wheat and Flour Studies, XII.—Factors influencing the Viscosity of Flour-Water Suspensions, II.—Effect of Hydrogen-Ion Concentration During Extraction or Digestion Period. A. H. Johnson and B. L. Herrington. (*Cereal Chem.*, 1928, 5, 14.)

Wheat and Flour Studies, XIII.—Relation Between the Fusibility of Flour Ash and its Mineral Constituents. A. H. Johnson and S. G. Scott. (*Cereal Chem.*, 1928, 5, 56.)

Refractive Indices of Aqueous and Alcoholic Extracts of Flour. D. W. Kent-Jones and A. J. Amos. (*Cereal Chem.*, 1928, 5, 45.)

Viscosity of Flour Suspensions. G. van der Lee. (*Cereal Chem.*, 1928, 5, 10.)

Aid in the Determination of Flour Strength. F. L. Engledow. (*Cereal Chem.*, 1928, 5, 1.)

Relation of Water-Absorbing Capacity of Flour to Protein Content, Baking Quality, and Loaf-Weight. C. E. Mangels. (*Cereal Chem.*, 1928, 5, 75.)

Improvements in the Fermentation of Bread Produced by (the addition of) Yeast Nutrients. L. Elion. (*Zeit. Angew. Chem.*, 1928, 41, 230.)

Determination of Chlorine in Bleached Flour. A. Seidenberg. (*Jour. Assoc. Off. Agric. Chem.*, 1928, 11, 132.)

Determination of Field Corn in Canned Mixtures of Field and Sweet Corn. J. L. Heid. (*Jour. Assoc. Off. Agric. Chem.*, 1928, 11, 136.)

Dairy Products

Variations in the Proportion of Solids—not Fat—in Milk. J. F. Tocher. (*Scottish J. Agric.*, 1927, 10, 201.)

Addition of Calcium Chloride to Milk for Cheese-Making. W. V. Price. (*Jour. Dairy Sci.*, 1927, 10, 373.)

Increasing the Yield of Cheese by the Addition of Calcium Chloride to Milk. G. Knaysi and J. D. Nelson. (*Jour. Dairy Sci.*, 1927, 10, 396.)

Appraisement of Contaminated Milk. M. Fouassier. (*Ann. Falsif.*, 1927, 20, 577.)

Determination of Chlorides in Milk. D. Raquet and A. Kerleveo. (*Ann. Falsif.*, 1927, 20, 580.)

Coconut Oil in Butter. H. Atkinson and A. Azadian. (*Ann. Falsif.*, 1927, 20, 593.)

Cheshire Butters and Cheeses of low Reichert-Meissl Value. H. Lowe. (*Analyst*, 1928, 53, 89.)

Accurate Determination of the Protein Content of Butter. B. J. Holwerda. (*Chem. Weekblad*, 1928, 25, 102.)

Determination of Salt in Butter and Margarine. G. van B. Gilmour. (*Analyst*, 1928, 53, 34.)

Cause of "Fishiness" in Dairy Products. W. L. Davies and A. T. R. Mattick. (*Nature*, 1928, 121, 324.)

The Sand-Gooch Method for Analysis of Butter. L. C. Mitchell. (*Jour. Assoc. Off. Agric. Chem.*, 1928, 11, 138.)

Effect of Alkali Solutions on Bacteria found in Unwashed Milk Bottles. C. S. Mudge and B. M. Lawler. (*Ind. and Eng. Chem.*, 1928, April, 378.)

Various

Chemical Composition of Certain Foods. L. Settimj. (*Atti R. Accad. Lincei*, 1927, [vi.], 6, 315.)

Nutritive Value of the Nitrogenous Substances Obtained from Certain Kinds of Preserved Foods. Experimental Researches on White Rats. S. Baglioni and L. Settimj. (*Atti R. Accad. Lincei*, 1927, [vi.] 6, 377.)

Large-Scale Production of Yeast as Fodder. E. G. Stich. (*Chem.-Ztg.*, 1928, 52, 149, 170.)

Detection and Determination of Added Moisture in Sausage. P. A. Sigler. (*Jour. Assoc. Off. Agric. Chem.*, 1928, 11, 112.)

The New Jelly-Strength Tester, and Some Experiments on Gelatin Gels. A. F. Tracey. (*Jour. Soc. Chem. Ind.*, 1928, No. 14, 94T.)

Gelatins of Different Origin as Emulsifying Agents. J. C. Kernot and J. Knaggs. (*Jour. Soc. Chem. Ind.*, 1928, 96T.)

Properties and Uses of an Edible Rice Cellulose. E. R. Harding. (*Ind. and Eng. Chem.*, 1928, March, 310.)

Viscosity and the Ice-Cream Mix. G. D. Turnbow and K. W. Nielson. (*Ind. and Eng. Chem.*, 1928, April, 376.)

Grading of Commercial Gelatin and its Use in the Manufacture of Ice Cream, I. D. C. Carpenter, A. C. Dahlberg, and J. C. Hening. (*Ind. and Eng. Chem.*, 1928, April, 397.)

Pure Food Gelatin. M. Briefer and J. H. Cohen. (*Ind. and Eng. Chem.*, 1928, April, 408.)

(*Continued on next page.*)

Recent Patents

These particulars of New Patents of interest to readers have been selected from the "Official Journal of Patents," and are published by permission of the Controller of H.M. Stationery Office.

Latest Patent Applications

9858. EGG PATENTS, LTD.: Process for preserving albumin. April 2.

9234. R. W. THOMPSON: Method of preserving food, etc. March 27.

8750. STABAVITE SYNDICATE, LTD., AND A. G. M. STABBACK: Preservation of edible products. March 22.

8952. A. V. STEWART: Process for preserving eggs. March 24.

8055. S. RACKLIN: Preservation of liquid eggs, meat, etc. March 16.

Specifications Published

286,861. A. J. MURPHY AND MURPHY AND SON, LTD.: Clarification process in the manufacture of beer, vinegar, and other like liquids.

286,914. R. PAUL AND R. H. GRANDSEIGNE: Process and device for obtaining white and purified pectin.

Printed copies of the full Published Specifications may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at the uniform price of 1s. each.

Abstracts Published

285,313. **Dried milk, etc.** C. KNOCH, 17, Hermannstrasse, Stuttgart, and F. GROSS, 1, Widerholdsplatz, Kirchheim-on-Teck, both in Würtemberg, Germany.

For making stable dry bodies from colloidal liquids, especially liquids such as milk, containing fat and albumen, the liquid is concentrated, a part of the substances present in solution is extracted as by osmosis, the remaining concentrated liquid is dried to powder form, and the powder is compressed into solid bodies, which are coated with a hard envelope consisting of the substances which have been previously extracted. As applied to milk, the liquid is evaporated *in vacuo* at a temperature below 60° C., milk sugar and salts are extracted by osmosis, the remaining concentrated liquid is transferred in the form of drops to steam-heated glass, china, or like drums, and after being momentarily heated the particles are brushed off by razor-sharp flexible scraping devices moving parallel to the axis along the drum surface. The brushed-off powder is freed from air by pressure, with or without the application of vacuum, and it is then intermittently compressed into solid bodies, which are coated by immersion in a highly concentrated solution of the milk sugar and salts or by being sprayed with the dry powder obtained by evaporation of the dialysed liquid.

284,273. **Purifying pectin solutions.** POMOSIN-WERKE GES., Osthafen, Frankfort-on-Main, Germany. Substances producing turbidity in pectin solutions, such as starch decomposition products, which resemble dextrin in character, albumens, etc., are removed therefrom by cooling the solutions and removing the precipitate formed. Ice formed during the cooling operation may be removed with the precipitate. In an example, apple pomace is lixiviated with water, and the liquid obtained is cooled 6-10° C. below zero for three to four hours. The precipitated solids are separated from the liquid by filter presses, centrifuges, suction filters, etc.

Recent Trade Marks

This list of Trade Marks of interest to readers has been selected from the "Official Trade Marks Journal," and is published by permission of the Controller of H.M. Stationery Office.

ORANGE DEW

488,055. **Canned and Dried Fruits and Vegetables for Food.** UNITED STATES PRODUCTS CORPORATION, Corner of Race and Moorpark Streets, San Jose, Santa Clara, California, United States of America. April 11, 1928.

485,724. **An illustration of St. Anne and the words St. Anne for Substances used as Food or as Ingredients in Food.** JOHN MARK AND COMPANY, LIMITED, 17 and 19, St. Ann's Square, Manchester. April 11, 1928.

HEMOLAC

487,114. **Substances used as Food or as Ingredients in Food.** THE WEST SURREY CENTRAL DAIRY COMPANY, LIMITED, "Cow and Gate" House, North Street, Guildford, Surrey. March 28, 1928.

CIELIM

486,412. **Essences (non-alcoholic) for use as Food, Syrups (non-alcoholic and not medicinal), Cordials (non-alcoholic, not medicated, and not aerated), and Preparations for making Beverages.** CONFECTIONERY INGREDIENTS AND ESSENCES, LIMITED, 61, Wigginton Road, York, Yorkshire. March 28, 1928.

(*Continued from previous page.*)

Cannery Waste Disposal Problem Nears a Solution. A. E. Kimberly. (*Canning Age*, 1928, April, 365.)

Characteristics of Micro-organisms Occurring in Brines. W. V. Cruess. (*Canning Age*, 1928, April, 375.)

Reducing Tank Hazards to a Minimum. C. T. Graham-Rogers. (*Fruit Prods. Jour.*, 1928, March, 9.)